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TEXAS AGRICULTURAL EXPERIMENT STATION

A. B. CONNER, DIRECTOR

COLLEGE STATION, BRAZOS COUNTY, TEXAS

BULLETIN NO. 529 SEPTEMBER, 1936

DIVISION OF CHEMISTRY

COMMERCIAL FERTILIZERS IN 1935-36

AGRICULTURAL AND MECHANICAL COLLEGE OF TEXAS
T. O. WALTON, President

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This is the annual Fertilizer Control Bulletin. It contains statistics regarding fertilizers sold in Texas, information regarding the fertilizer law, and analyses of samples of the fertilizer sold by different manufacturers. The extent to which the various manufacturers are coming up to their guarantees is shown. Most of the fertilizer sold in Texas is well up to guarantee.

The total sales of fertilizer in Texas for 1935-36 were 60,016 tons. In 1934-35 the sales were 59,480 tons. In 1933-34 they were 47,204 tons. Cottonseed meal sold as a feed but used as a fertilizer was not included in these totals. Sales of fertilizer were almost the same as last year. Practically all the sales of mixed fertilizers were confined to about 20 analyses.

The Bulletin contains a brief discussion of the use of fertilizers and suggestions for their use on various crops and in various sections of the State.

Tables are given showing the extent to which the various fertilizer manufacturers met or exceeded their guarantees. The cost of fertilizer was slightly more in 1935-36 than in 1934-35.

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COMMERCIAL FERTILIZERS IN 1935-36

G. S. Fraps, State Chemist, S. E. Asbury, Assistant State Chemist, and T. L. Ogier, Assistant Chemist

Fertilizer laws require fertilizer to be correctly labeled so that the purchaser can know what he is getting. The object of the fertilizer law is to protect the farmer or other users of fertilizer against misrepresentation of the composition or fertilizing value of the fertilizer as well as manufacturers and dealers against unfair competition due to such misrepresentation.

The first Texas fertilizer law was passed in 1899. It was revised and amended in 1911. The results of the fertilizer inspection have been published in bulletins of the Texas Agricultural Experiment Station regularly since 1906. This is the thirty-fourth Fertilizer Control Bulletin. It contains statistics, definitions of terms, a report on the analyses made in enforcing the provisions of the Fertilizer law, and information regarding the use of fertilizers.

Explanation of Terms

Nitrogen refers to the total nitrogen in the fertilizer. It is necessary in proper amounts for the development of all parts of the plant, but an excess of nitrogen delays maturity and is liable to promote growth of stalk and leaves at the expense of fruit. Nitrogen is needed by many Texas soils, especially the sandy soils in the eastern and northern parts of the State. Since nitrogen is used in comparatively large quantities by plants and is, to some extent, washed from the soil, it is usually the first element to become depleted from a fertile soil.

Available phosphoric acid is the phosphoric acid in fertilizers which can be taken up quickly by plants. Phosphoric acid promotes the fruiting of plants, though it is also necessary for the development of all parts of the plant.

Total phosphoric acid is the entire quantity of the phosphoric acid present, whether highly available or not. A guarantee of total phosphoric acid in place of available is made in bone, tankage, rock phosphate, and basic slag.

Potash guaranteed in a fertilizer is required by the law to be soluble in water. Potash, like nitrogen, is needed by all parts of the plant, but especially by stalk and leaves. An excess of potash delays maturity and is liable to promote growth of the stalk and leaves at the expense of the fruit. When potash is abundantly supplied, plants may take up more than they need. Potash is present in soils more abundantly than phosphoric acid.

Valuation per ton represents the approximate average cost of the plant food in the unmixed fertilizer, at retail. It is usually less than

the price at which the mixed fertilizer is sold, but since it is an average it may be more than the price of some of the unmixed fertilizer ingredients. The selling price includes cost of mixing, bags, transportation, the profit of the manufacturers if any and that of the dealer. The valuations are decided on about September 1, and the prices often change before the chief active fertilizer season, which is February to April in Texas. The valuation sums the value of the three plant foods shown in the analysis into a single figure, and is convenient for this purpose. The fertilizer law permits a deficiency of less than ten per cent in one plant food to be compensated by an excess of another, but if the valuation is four per cent less than the guaranteed valuation, a rebate must be paid to the purchaser. The valuation found compared with the valuation guaranteed shows whether or not the fertilizer as a whole is better or poorer than the guarantee as a whole. The following valuations were used in 1935-36.

	Cents per pound
Nitrogen	12.0
Available phosphoric acid	5.5
Total phosphoric acid in Thomas phosphate, tankage, and bone meal	3.6
Total phosphoric acid in rock phosphate	1.3
Potash	5.5

Information on the Fertilizer Bag and Tag

A fertilizer tax tag is required to be placed on every bag of fertilizer before it is offered for sale or sold. The guaranteed analysis of the fertilizer is required by law to be printed on the bag or on the tag attached to the bag, so that the purchaser can see what he is buying. Total phosphoric acid may be guaranteed for bone or tankage instead of available phosphoric acid. A guarantee of total phosphoric acid is required in Thomas phosphate or rock phosphate. The information required on the package is as follows:

Net weight
Name of fertilizer in full
Name and address of manufacturer
Guaranteed analysis:
    Nitrogen, per cent
    Available phosphoric acid, per cent
    Potash, per cent

When a fertilizer is named by figures in this Bulletin, the first figure stands for the percentage of nitrogen, the second for the percentage of available phosphoric acid, and the third for the percentage of water-soluble potash. For example, a 4-8-4 fertilizer contains 4 per cent of nitrogen, 8 per cent of available phosphoric acid, and 4 per cent of potash.

How to Calculate the Valuation

The valuation of a fertilizer is calculated by multiplying the composition by the valuation of each unit of plant food and adding the products. A unit is one per cent of a ton, or 20 pounds; so if the valuation of

nitrogen is 12 cents a pound, the valuation of a unit is 12x20=$2.40. The valuation of a unit of available phosphoric acid at 5.5 cents a pound would be 5.5x20=$1.10; the valuation for a unit of potash at 5.5 cents a pound would be $1.10. The following is an example of a calculation at the prices given above:

Valuation of 4-8-4 fertilizer

Nitrogen	4 x $2.40	=	$9.60
Available phosphoric acid	8 x $1.10	=	$8.80
Potash	4 x $1.10	=	$4.40
Total valuation per ton			$22.80

Quantity Sold

The quantities of commercial fertilizers sold in Texas for several seasons, from September 1 to August 31, are given in Table 1. These are the actual sales as reported by the manufacturers, and not the tag sales. The tag sales are always a little larger than the actual sales. The sales in 1935-36 were about the same as for last season. The largest sales so far made in Texas were during the season 1928-29. Fertilizer statistics for a number of years to August 31, 1926, have been published in Bulletin 350.

Table 1. Fertilizers sold in Texas, (not including cottonseed meal sold as feed but used as fertilizer).

1905-06	13,500
1910-11	52,985
1913-14	77,400
1914-15	17,500
1917-18	58,000
1918-19	46,000
1919-20	56,700
1920-21	14,850
1921-22	33,000
1922-23	73,300
1923-24	126,179
1924-25	97,719
1925-26	121,747
1926-27	79,863
1927-28	139,126
1928-29	187,215
1929-30	138,917
1930-31	64,424
1931-32	33,406
1932-33	30,843
1933-34	47,204
1934-35	59,480
1935-36	60,016

Table 2. Fertilizer sales by grades in order of tonnage for 1935-36

	1935-36	1934-35	1933-34	1932-33
4-8-4	12,118	10,682	7,866	3,884
4-12-4	8,698	9,325	6,443	3,156
4-8-6	6,995	8,384	5,803	2,749
6-10-7	5,109	6,009	3,951	2,060
6-12-6	4,029	4,766	3,380	2,494
3-10-3	3,500	3,450	3,579	1,761
Superphosphate, 18%	3,408	3,249	4,858	4,373
Superphosphate, 20%	2,517	1,416	2,022	1,982
4-10-0	2,040	1,003	756	497
Sulphate of ammonia	1,588	1,139	799	801
Bone meal	1,283	1,232	1,052	498
Nitrate of soda, 15% and 16%	1,080	1,146	1,116	624
5-15-5	923	1,420	868	606
11-48-0	773	670	265	104
6-9-3	751	598	258	148
3-10-0	696	.....	.....	.....
16-20-0	692	570	220	445
4-10-7	649	681	642	211
Cyanamid	569	507	550	169
Superphosphate 32%	328	.....	.....	.....
Tankage, bat guano and activated sludge	305	679	695	1,680
4-8-10	297	301	186	110
10-20-10	245	314	161	151
Kainit, 20%	222	196	180	180
Muriate of potash 50%	151	122	198	178
Lawn and garden fertilizer	131	183	105	94
0-12-4	115	29	4	0
10-0-10	108	72	51	26
Cottonseed meal	100	73	191	668
Superphosphate, 45%	93	35	56	34
8-24-8	77	134	65	46
5-15-0	67	300	.....	.....
10-10-0	57	169	53	.....
0-15-6	54	34	25	23
9-27-9	49	43	22	7
6-18-6	44	172	180	39
9-18-18	41	76	197	200
Calcium nitrate	30	20	80	93
Soft phosphate with collodial clay	27	65	40	42
Muriate of potash 60%	24	.....	.....	.....
Sulphate of potash 48%	14	10	64	15
Basic slag	10	22	.....	.....
Manure salts, 20%	9	.....	.....	.....
Miscellaneous unmixed fertilizer	0	94	58	24
Kainit, 14%	0	80	122	130
10-30-10	.....	.....	25	2
3-10-8	.....	.....	16	223
10-20-0	.....	.....	2	6
4-10-2	.....	.....	.....	156
12-24-12	.....	.....	.....	121
20-20-0	.....	.....	.....	33
Total	60,016	59,470	47,204	30,843

Quantity of Sales by Grades

Table 2 contains the sales of fertilizer by grades for four seasons, arranged in order according to sales in the season 1935-36. Sales of 4-8-4 fertilizer are highest of all in 1935-36, as in 1934-35. The 4-12-4 comes second, the 4-8-6 comes third and the 6-10-7 comes fourth.

Quantity of Cottonseed Meal Used as a Fertilizer

The tonnage of cottonseed meal reported in Table 2 includes only that tagged with fertilizer tax tags and sold as a fertilizer.

Table 3. Average composition, valuation, and selling price of grades of fertilizer, 1935-36

Grade	Number averaged	Nitrogen per cent	Available Phos. Acid per cent	Potash per cent	Guaranteed Valuation per ton	Valuation found per ton	Selling price per ton
0-12-4	1	.....	12.22	4.25	$17.60	$18.12	.....
3-10-0	4	2.96	10.82	.....	18.20	19.01	$25.26
3-10-3	84	3.10	10.32	3.23	21.50	22.37	28.31
4-8-4	177	4.03	8.44	4.21	22.80	23.58	29.40
4-8-6	149	4.05	8.33	6.10	25.00	25.57	31.12
4-8-10	8	3.96	8.31	10.16	29.40	29.81	34.09
4-10-0	16	4.23	10.14	.....	20.60	21.31	27.78
4-10-7	12	4.21	10.09	7.25	28.30	29.18	32.94
4-12-4	197	4.09	12.22	4.26	27.20	27.94	33.80
5-10-0	3	5.47	10.74	.....	23.00	24.93	30.00
5-15-5	9	5.24	15.30	4.99	34.00	34.90	39.20
6-9-3	15	5.91	9.43	3.02	27.60	27.86	32.72
6-10-7	95	6.00	10.39	7.00	33.10	33.53	36.78
6-12-6	83	6.06	12.28	6.27	34.20	34.93	37.29
8-24-8	1	7.77	22.81	8.89	54.40	53.52	56.55
9-27-9	1	9.85	21.72	7.65	61.20	55.95	61.00
10-0-10	6	10.04	.....	9.87	35.00	34.96	39.30
10-6-4 (flowers)	3	10.09	6.64	4.06	35.00	36.00	66.67
10-10-0	3	9.98	10.54	.....	35.00	35.55	38.00
10-20-10	4	9.61	19.49	11.11	57.00	56.72	58.21
11-48-0	8	11.37	48.19	.....	79.20	80.30	64.86
16-20-0	10	16.12	21.01	.....	60.40	61.79	52.31
Ammonium Sulphate	3	20.89	.....	.....	49.92	50.13	45.53
Bone Fertilizer (flowers)	1	2.54	24.29*	.....	23.21	23.59	200.00
21% Cyanamid	2	21.23	.....	.....	50.40	50.94	38.00
Activated Sludge 5.5-2.0-0	1	4.96	2.68	.....	15.40	14.85	25.00
20% Kainit	3	.....	.....	19.95	22.00	21.95	27.67
20% Manure Salts	1	.....	.....	18.77	22.00	20.65	26.75
Muriate of Potash—50%	6	.....	.....	50.84	55.00	55.92	42.15
15% Nitrate of Soda	1	15.73	.....	.....	36.00	37.75	39.75
16% Nitrate of Soda	10	16.34	.....	.....	38.40	39.22	39.46
Raw Bone Meal	13	4.36	21.29*	.....	24.72	25.78	35.02
Soft Phosphate with Colloidal Clay	1	.....	27.34*	.....	5.72	7.11	12.60
Sulphate of Ammonia	20	20.73	.....	.....	48.00	49.74	38.74
18% Superphosphate	48	.....	18.84	.....	19.80	20.73	24.46
20% Superphosphate	28	.....	20.63	.....	22.00	22.70	26.14
32% Superphosphate	4	.....	33.00	.....	35.20	36.30	38.00
Tankage	1	4.87	18.68*	.....	22.44	25.14	40.00

*Total Phosphoric Acid.

Composition and Selling Prices of Different Grades of Fertilizer

Table 3 contains the average composition, the guaranteed valuation, the valuation found by analysis, and the average retail selling prices per ton, of various grades of fertilizers. The average retail selling price is the average of the cash retail prices furnished to the fertilizer inspector by the dealers. The prices of the same fertilizer may be different in different towns on account of differences in cost of transportation or for other causes. The retail price includes handling costs, carrying charges, and the dealer's profits, as well as the cost of the plant food used in the materials from which the fertilizer is made.

The average valuations in Table 3 exceed the valuations guaranteed in almost every case. The exceptions are 8-24-8, 9-27-9, 10-0-10, 10-20-10, activated sludge, and kainit. In all of these, however, the valuations found are only slightly below the valuations guaranteed.

Cost of Plant Food

Table 4. Approximate average cost of plant food in cents per pound arranged in order of increasing cost 1935-36

Grade	Nitrogen	Available Phosphoric Acid	Potash
21% Cyanamid	9.05	.....	.....
Muriate of Potash, 50%	.....	.....	4.21
Sulphate of Ammonia	9.68	.....	.....
11-48-0	9.83	4.51	.....
16-20-0	10.39	4.76	.....
Ammonium Sulphate	10.94	.....	.....
9-27-9	11.96	5.48	5.48
10-20-10	12.25	5.62	5.62
Nitrate of Soda, 16%	12.34	.....	.....
8-24-8	12.48	5.72	5.72
10-10-0	13.03	5.97	5.97
6-12-6	13.08	6.00	6.00
Nitrate of Soda, 15%	13.25	.....	.....
32% Superphosphate	.....	5.94	.....
6-10-7	13.33	6.11	6.11
10-0-10	13.48	.....	6.18
5-15-5	13.84	6.34	6.34
4-8-10	13.92	6.38	6.38
4-10-7	13.97	6.40	6.40
6-9-3	14.23	6.52	6.52
Superphosphate, 20%	.....	6.53	.....
20% Manure Salts	.....	.....	6.69
Superphosphate, 18%	.....	6.79	.....
4-12-4	14.92	6.84	6.84
4-8-6	14.94	6.85	6.85
20% Kainit	.....	.....	6.92
4-8-4	15.47	7.09	7.09
5-10-0	15.65	7.17	.....
3-10-3	15.80	7.24	7.24
4-10-0	16.19	7.42	.....
3-10-0	16.66	7.63	.....
Raw Bone Meal	17.00	5.10*	.....
Activated Sludge 5.5-2.0-0	19.48	8.93	.....
Tankage	21.40	6.42*	.....
10-6-4	22.86	10.48	10.48
Soft Phosphate with Colloidal Clay	.....	2.86*	.....
Bone Fertilizer	103.40	31.02*	.....

*Total Phosphoric Acid

Table 4 contains the retail cost of a pound of nitrogen, of available phosphoric acid, and of potash, in cents per pound, as calculated from the cash selling prices per ton given in Table 3 and the guaranteed composition. For the purpose of this calculation it was assumed that the prices were in the same ratio as the valuations. As the prices of the same fertilizer in different places vary, these figures are not correct for any particular locality, but represent averages only, and are for purposes of comparison. The prices were collected by the inspectors from retail merchants handling fertilizer. Grades used extensively near the factories would average a lower price than those used at a distance, on account of lower transportation costs. The fertilizers with the lowest prices of plant food are given first in the table.

Cost of nitrogen. Cyanamid was the cheapest source of nitrogen, sulphate of ammonia was next, 11-48-0 third, and 16-20-0 came fourth. Excluding the fertilizer in small packages for home use, tankage was the

most expensive source of nitrogen, then activated sludge, raw bone meal next, followed by 3-10-0 fertilizer. Nitrogen in nitrate of soda (15%) cost about 13.25 cents a pound compared with 9.68 cents a pound for that in sulphate of ammonia. Nitrogen cost more in the mixed fertilizers than in sulphate of ammonia or cyanamid because it costs to mix the fertilizers. Nitrogen in a number of the mixed fertilizers cost less than in nitrate of soda. The lowest-priced nitrogen in the mixed fertilizer was in the 11-48-0, followed in order by the 16-20-0, 9-27-9 and 10-20-10. Nitrogen was lower in price than last season in some fertilizers and higher in others. The difference averaged .21 cents a pound less for nitrogen in sulphate of ammonia, .01 cents less for nitrogen in 16% nitrate of soda, 0.32 cents less for that in 3-10-3, and .42 cents more for that in 4-12-4. Nitrogen in 16 per cent nitrate of soda averaged .91 cents a pound cheaper than in 15 per cent nitrate of soda.

Cost of phosphoric acid. The cheapest source of phosphoric acid was in 11-48-0, then 16-20-0, followed by 9-27-9 and 10-20-10. The cost of available phosphoric acid was about .26 cents less per pound in 20 per cent superphosphate than in 18 per cent. Omitting the household fertilizers, phosphoric acid was most expensive in activated sludge, then in 3-10-0, then 4-10-0, and then 3-10-3. Available phosphoric acid was 0.13 cents a pound higher in 4-12-4 than it was last season, and 0.11 cents a pound higher in 3-10-3, than last year.

Cost of Potash. Muriate of potash was the cheapest form of potash, and 3-10-3 the most expensive in mixed fertilizers. Potash cost 1.04 cents a pound less in muriate of potash, than it did last season, but 0.11 cents a pound more in 3-10-3, and 0.13 cents a pound more in 4-12-4.

Relation of Cost to Concentration of Fertilizers

Certain fertilizers are sold which contain the plant food in the same ratio so that, so far as nitrogen, phosphoric acid and potash are concerned, they are the same fertilizer except in concentration, or strength.

Table 5. Relative cost of approximately the same amount of plant food in different grades of fertilizer

Grade	Available phosphoric acid pounds	Nitrogen pounds	Potash pounds	Cost
Group 1				
1 ton 9-27-9	180	540	180	$61.00
1.8 tons 5-15-5	180	540	180	70.50
2.25 tons 4-12-4	180	540	180	76.05
3.0 tons 3-10-3	180	600	180	84.93
Group 2				
1 ton 10-20-10	200	400	200	$58.21
1.67 tons 6-12-6	200	400	200	62.15
2.5 tons 4-8-4	200	400	200	73.50

The ratio of plant food in the 4-12-4, 5-15-5, and 9-27-9 fertilizers is exactly the same, as the proportions are three parts phosphoric acid to one of nitrogen and one of potash. The 3-10-3 fertilizer has practically the ratio 1-3-1. Table 5 shows the approximate cost of nearly equal quantities of plant food in these fertilizers at the average prices given in Table 3. The plant food in 2.25 tons of 4-12-4 costs $6.45 more than an equal quantity in 5-15-5. The three tons of 3-10-3 cost $8.88 more than the 2.25 tons of 4-12-4, but when allowance of $2.20 is made of the 40 pounds more phosphoric acid it contains, the plant food in 3-10-3 costs about $6.68 more. Similar differences are to be seen with the other grades. The most concentrated mixed fertilizer was the cheapest per pound of plant food, or to put it another way, the highest-priced fertilizer per ton may be the lowest-priced per pound of plant food. This difference is caused partly by freight charges, partly by the cost of bagging, etc. The higher cost of manufacture of the more concentrated fertilizers is frequently more than offset by the cost of freight, bags, etc. The cost of phosphoric acid averaged slightly less in 20 per cent superphosphate than in 18 per cent. (Table 4)

Comparing Costs of Fertilizer

The relative money value of two or more kinds of fertilizer may be roughly compared by dividing the price at which the fertilizer is sold per ton by the valuation per ton of the fertilizer. Guaranteed valuations for many grades for the season of 1935-36 are given in Table 3, and while the valuations for 1936-37 may be somewhat different, these valuations may be used for comparative purposes. For example, if a 4-8-4 fertilizer sells for $29.00 a ton and a 6-12-6 fertilizer for $34.00, which is cheaper? Using the valuations from Table 3, for 4-8-4, the selling price $29.00 divided by the valuation $22.80 gives 1.27; for 6-12-6, the selling price $34.00 divided by the valuation $34.20 gives 0.99. Thus one dollar of valuation costs $1.27 in 4-8-4, and 0.99 in 6-12-6; therefore the 6-12-6 is cheaper. Similar calculations may be made for other grades and other prices.

Of course the suitability of the fertilizer to the soil and crop must be considered in addition to the relative cheapness of the plant food.

Fertilizer Analyses to be Sold in 1936-37

The grades of fertilizer sold in Texas are limited in number. This standardization aids the farmer to become familiar with the different kinds of fertilizer, enables him to decide more readily on the proper kind to be used, enables the agricultural worker to make definite recommendations, and reduces the cost of manufacture and handling, thereby also reducing the cost to the consumer. At a conference with fertilizer

manufacturers doing business in Texas, Louisiana, Mississippi, Arkansas, and Oklahoma in July 1936, grades of mixed fertilizer were adopted for these states. This was the twelfth such conference for Texas manufacturers, and the fourth joint conference.

The following grades were adopted for Texas for 1936-37:

0-12-4	4-10-7	9-27-9
0-15-6	4-12-4	10-0-10
3-10-0	5-15-0	10-10-0
3-10-3	5-15-5	10-20-10
4-8-4	6-8-4	11-48-0
4-8-6	6-9-3	16-20-0
4-8-10	6-10-7	14-28-0
4-10-0	6-12-6	15-30-15

MATERIALS

Superphosphate 18%	Kainit 20%
Superphosphate 20%	Cotton Seed Meal
Superphosphate 32%	Bone Meal
Superphosphate 45%	Cyanamid 21%
Sulphate of ammonia 20%	Cyanamid 22%
Nitrate of soda 15%	Dicalcium phosphate 42%
Nitrate of soda 16%	Dicalcium phosphate 36%
Muriate of potash 50%	Dicalcium phosphate 30%
Muriate of potash 60%	Dicalcium phosphate 24%
Sulphate of potash 48%	Basic slag
Manure salts 30%	Sheep manure
Calcium nitrate	Tankage
Cal-nitro 16%	Ground Phosphate Rock

Free Analysis

Purchasers of commercial fertilizers for their own use (but not for sale), can secure a free analysis of a sample. Those who desire the free analysis of a sample of commercial fertilizer should write for a blank, "Application for Free Fertilizer Analysis," to the State Chemist, College Station, Texas, before taking any sample. The proper sampling of a fertilizer requires care and the law requires it to be taken in a certain way so that a fair sample is taken. If the sample is not properly taken, it does not represent the fertilizer sampled, and the analysis may be better or poorer than the goods actually are. This privilege of a free analysis applies only to fertilizers tagged, and sold under the fertilizer law and to samples properly taken so that they represent the goods sampled.

Analysis of Fertilizers, 1935-36

Samples of fertilizer were collected from the grades being sold in many towns and cities. The chief places of sales were visited several times. The number of samples registered for analysis was 1033.

Table 7, near the end of this Bulletin, contains a list of the samples of fertilizer subjected to analysis in the season ending September 1, 1936. Analyses below guarantee are brought out in heavy type. Practically

all samples of fertilizer were collected by our inspectors. Analyses and inspection were made by S. E. Asbury, T. L. Ogier, Waldo Walker, W. H. Garman, C. D. Marrs, and Russell Smith.

Table 6. Average valuation of all fertilizers guaranteed and found in dollars a ton

	Number averaged	No. of samples more than 4 per cent below guarantee	Valuation per ton	
			Guaranteed	Found
American Cyanamid Company	10	0	$61.31	$62.60
Armour Fertilizer Works	95	1	28.44	29.16
The Barrett Company	4	0	43.20	44.80
Blume System Tree Experts	1	0	21.50	26.14
Bryan Cotton Oil & Fertilizer Company	9	0	25.84	28.14
Campbell Fertilizer Company	17	0	22.27	25.71
Chilean Nitrate Sales Corporation	2	0	38.40	39.24
David Hardie Seed Company	2	0	31.10	31.39
Davison-Pick Fertilizers, Inc	32	0	26.04	26.76
East Texas Cotton Oil Company	29	1	27.00	27.55
Farmers Cotton Oil Company	8	0	23.98	24.71
Federal Chemical Company, Inc	66	3	25.27	25.59
Fidelity Chemical Corporation	76	0	30.99	32.01
Ford Motor Company	3	0	49.92	50.13
Gilmer Cotton Oil & Fertilizer Company	13	5	24.45	23.35
Houston Packing Company	2	0	23.72	28.62
City of Houston Engineering Department	1	0	15.40	14.85
International Agricultural Corporation	46	0	26.35	26.94
Jacksonville Fertilizer Company	14	0	29.26	31.54
Kelly-Weber & Company, Inc	17	1	26.41	26.94
La-Tex Fertilizer Company	2	0	26.10	26.73
Lockey Gin Service	5	0	23.96	25.01
Longview Cotton Oil Company	12	2	26.65	26.91
Marshall Cotton Oil Company	18	1	24.88	25.10
Mixson Brothers	13	1	25.56	26.41
New Jersey Fertilizer Company	1	0	23.21	23.59
Oil Mill & Fertilizer Works	15	0	27.79	28.99
Palestine Oil Mill & Fertilizer Works	54	3	26.87	27.48
Pate Bros. Fertilizer Works	19	0	24.17	25.37
Pittsburg Cotton Oil Company	23	1	25.39	25.67
Robert Nicholson Seed Company	4	0	31.10	32.66
Shreveport Fertilizer Works	60	3	25.59	25.60
Soil Builders, Inc	1	0	5.72	7.11
Swift & Company Fertilizer Works	129	1	28.18	28.90
Temple Cotton Oil Company	7	0	25.03	25.71
Texas Chemical Company	7	0	24.72	25.90
Texas Farm Products Company	75	2	28.69	29.12
Thomas Self	10	1	27.51	27.95
Tri-State Fertilizer & Lumber Company	16	0	25.87	28.66
Tyler Fertilizer Company	24	1	26.25	26.98
United Chemical Company	33	1	26.53	26.90
Valley Fertilizer Company	1	0	25.00	28.32
Virginia-Carolina Chemical Company	46	0	28.36	29.53

Relation of Valuation Guaranteed to Valuation Delivered

Table 6 contains the average guaranteed valuation, and the average valuation found by our analyses, for all manufacturers doing business in Texas. In the preparation of this table, all analyses made were averaged, even though several were made of each brand and fertilizer materials are included as well as mixed fertilizers.

Averages Below Guarantee

Whenever any lot of fertilizer is 4 per cent or more below guarantee, the law requires all persons who have sold this lot of fertilizer to make good the deficiency to all purchasers. This rebate is paid by the manufacturer to the dealer and by the dealer to the customer. The number of lots on which rebates were paid by each manufacturer is shown in Table 6.

INVESTIGATIONS UNDER THE FERTILIZER LAW

The State Chemist is required by the fertilizer law to investigate the composition, properties, and agricultural values of fertilizers or fertilizer materials, or ingredients of fertilizer sold or offered for sale within the State of Texas, and to publish his results as he may find.

Relation to Experiment Station Work

The work of the State Chemist is closely related to the chemical work of the Experiment Station. In his capacity as Chief of the Division of Chemistry of the Experiment Station, the State Chemist is carrying out extensive investigations into the fundamental properties of soils, especially with respect to their content of plant food. This work is related closely to the use of fertilizers and is connected with investigations as to the agricultural values of fertilizers required by the Fertilizer Control, for fertilizers vary in effect upon the different soils.

Colloidal Mineral Phosphate

Colloidal mineral phosphate is a natural phosphate of lime containing 20 per cent of total phosphoric acid or more. The phosphate of lime is so finely divided that some of it is termed colloidal. The availability to plants of the phosphoric acid of colloidal mineral phosphate is on an average about 40 per cent of that of the available phosphoric acid in 20 per cent superphosphate. See Bulletin No. 509.

Sulphur, Gypsum, Manganese, and Other Secondary Fertilizing Elements

We are unable to recommend the use of sulphur or gypsum as a fertilizer in Texas or for application to Texas soils. The experiments which have been carried out do not give results which justify the use of such materials on soils (see Bulletins 408 and 414). This also applies to the natural mixture of sulphur, gypsum, sulphuric acid and other substances, which various parties and concerns have attempted to sell or exploit as a fertilizer or soil amendment. It is not recommended for use as a fertilizer and does not give results on soils which need fertilizer, as shown in Bulletins 408 and 414.

Investigations on the use of manganese sulphate for Texas soils are given in Bulletin 432. The results of the experimental work do not justify recommendation of the use of manganese sulphate on Texas soils.

The general use of copper, iodine, zinc, boron, magnesia, and other secondary fertilizing elements is not recommended. There are exceptional cases where iron may be needed.

Greensand

A report of investigations regarding the value of greensand as a fertilizer was published in Bulletin 428. The availability of the potash and phosphoric acid in greensand was found to be low. Greensand has a little fertilizing value but can be used in quantities of 5 to 40 tons to an acre on land near to the deposits where it can be mined and applied at a cost closely related to its value. It does not contain sufficient fertilizer value to justify attempting to market it.

Polyhalite and Sewage Sludge

Polyhalite, a mineral found in deep deposits in western Texas and in New Mexico, contains about 12 per cent potash, which is only partly soluble in water, but which is readily available to plants (see Bulletin 449).

Digested sewage sludge is low in plant food, and the nitrogen has a low availability. Dried activated sludge contains about 5 per cent nitrogen and 2 per cent available phosphoric acid and the nitrogen has a good availability to plants (see Bulletin 445).

GENERAL CONSIDERATIONS ON THE USE OF FERTILIZERS

Fertilizers supply the three forms of plant food most necessary for growing crops, namely, nitrogen, phosphoric acid, and potash. For best results, other conditions should be favorable, such as a well-drained soil in good physical condition, a well-prepared seed bed, good seed, good cultivation, sufficient rainfall or irrigation, and suitable rotation. Nitrogen is the most expensive plant food, and for this reason the amount of fertilizer used generally does not supply all the nitrogen required by the crop, but the cost of nitrogen is decreasing. A cropping system which includes the regular growing of suitable legumes, such as clover, cowpeas, soy beans, velvet beans, peanuts, or alfalfa, should be followed for the purpose of securing nitrogen from the air, provided the legume crops can be grown to advantage. A suitable rotation also adds organic matter to the soil, utilizes time and labor to better advantage, aids in controlling insects pests and plant diseases, and has other favorable effects.

The proper fertilizers to use depends upon the kind of soil, the climate, the crop, how long the soil has been in cultivation, whether or not legumes have been turned under or grazed off, what the soil will produce without fertilizer, and other conditions.

Soils which have been in cultivation a long time, or very sandy soils are usually more deficient in nitrogen than new soils or clay soils. Soils having a rotation which includes legumes need less nitrogen than those cropped constantly to non-legumes.

Clay soils and soils with clay or loam subsoils in cultivation less than 15 years need little potash in Texas for ordinary farm crops, but light sandy soils with sandy subsoils may need potash. Larger amounts of fertilizer may be more profitably used on crops with a high acre value, such as fruit or truck crops, than on ordinary farm crops, such as corn or cotton. The fertilizer on cotton may profitably be twice as much as that used on corn.

Best results are secured by a well-balanced supply of plant food in the soil. An excess of nitrogen or an excess of potash is shown by the production of a heavy stalk or vine, with a deficiency of fruit or delayed maturity. If such land has not been fertilized, probably the best fertilizer to use is 200 to 300 pounds of superphosphate to the acre. This will frequently (but not always) promote fruiting. If a fertilizer has been used, the remedy is to decrease the percentage of nitrogen and to increase the percentage of phosphoric acid in subsquent applications. The percentage of potash may also be decreased.

Excess nitrogen in soil when truck crops are grown may produce rapid growth with soft tissues, which do not stand up well under shipment. Strawberries, for example, produce large fruits which are not firm enough to ship well. Lettuce, cabbage, and similar crops may not be firm enough to stand shipment. Increased quantities of potash will not prevent softness caused by excess of nitrogen.

Excess of nitrogen renders some plants more liable to attack by some diseases. Excess of nitrogen also delays maturity. Excess of potash, like excess of nitrogen, delays maturity of the crop. A well-balanced fertilizer should be selected, due consideration being given to the soil, the crop, the character of growth, and other conditions. A well-balanced fertilizer will produce a crop that is firm and ships well.

How and When to Apply Fertilizer

Fertilizer is generally applied under the seed at the time of planting or previous to planting. It should not touch the seed, but is best placed in a narrow band which is one to three inches below the seed and at the side, about 2 inches from the seed or plants. A combined planter

and fertilizer distributor may be used, but care should be taken to select a machine which applies the fertilizers properly, as some machines are not satisfactory.

Fertilizer may be placed in the ground not more than three weeks before planting. If applied too early, there is danger of loss of plant food by fixation and leaching.

Applications of more than 800 pounds of fertilizer to the acre are best made partly in the drill and partly broadcast. However, with some vegetables it is best to apply all the fertilizer in the drill. If desired, high analysis fertilizer may be mixed with fine dry sand before it is applied.

In dry sections, where the soil above the seed is liable to dry out, the fertilizer may be applied on the firm soil at the same depth as the seed but by side of the seed. Sometimes it may be advisable to put it in when the land is bedded, especially on heavy soils where there is little danger of loss by leaching. When fertilizers of high analysis are used, especial care should be taken not to apply them closer than 2 inches to the seed or to the roots of growing plants. These fertilizers are quite strong, and burning or other injury may result if they are placed closely to roots of plants.

How Much to Apply

Farmers not experienced in the use of fertilizer should begin with moderate amounts, such as 200 to 400 pounds to the acre for cotton or corn and 400 to 800 pounds for truck crops. Large amounts may then be tried on a small scale and then these larger amounts used if these trials appear to justify it. The approximate amounts to use are indicated below.

Side Dressings

More than one application of fertilizer is not usually recommended for cotton or corn. Under exceptional conditions, however, more than one application may be made for cotton or corn. These conditions would include: (1) when more than 500 pounds of fertilizer to the acre is to be used; (2) when the plants appear to be suffering from a deficiency of available plant food, particularly nitrogen; (3) if the weather in the spring has been excessively wet, so as to cause considerable leaching; (4) if the soil is a deep sandy soil, where the plant food is likely to leach out (see Bulletin No. 490).

Side dressings of cotton with nitrate of soda, sulphate of ammonia, or other sources of nitrogen are not generally to be recommended, but may be used when the fertilizer applied at planting does not contain enough nitrogen, or on deep sandy soil, where there may be considerable loss from

leaching. Under such conditions, 100 pounds per acre of nitrate of soda or sulphate of ammonia may be applied to cotton just after chopping.

Corn which was not fertilized before planting may frequently use to advantage a side dressing of nitrate of soda or sulphate of ammonia, applied when the corn is knee-high.

Side dressings are frequently applied to truck crops. In such case a complete fertilizer is applied before or at the time of planting, and one or more side dressings of sulphate of ammonia or nitrate of soda afterwards.

There is little danger of loss of phosphoric acid or potash by leaching, while soluble nitrogen may be lost by leaching.

Fertilizers for East Texas

The soils of East Texas as a general rule respond well to fertilizers, and the recommendations made here apply chiefly to this section of the State. Many of the soils of East Texas are sandy and low in phosphoric acid and nitrogen; they are usually better supplied with potash but sometimes they are low in potash. The heavier soils and the bottom lands are much better supplied with plant food than the upland soils.

Fertilizers for the Black Lands

The heavy black limestone soils of Central Texas, especially the Houston clay and the Houston black clay, do not give as much response to fertilizers as the sandy soils of eastern Texas. Sometimes they respond to applications of nitrogen and phosphoric acid, although in general the use of fertilizers on these soils has not been profitable. In some cases they give satisfactory results one year and unsatisfactory the next. These soils appear to need vegetable matter first, such as is supplied by well rotted manure, by legume crops turned under or grazed off, or by winter crops. A rotation is also of advantage (see Bulletin 365).

Sandy lands in this section will probably respond to fertilizer, though little has been used on them.

Fertilizers for West Texas

Some of the lighter soils of West Texas are low in phosphoric acid and potash, and fertilizers will probably be needed in this section of the State as time goes on. In fact, fertilizers have already been used with good results in some sections. Some of the soils of West Texas contain no more plant food than those of East Texas, but the roots of the plants penetrate deeper in dry sections and have more soil to feed upon than in humid sections so that the plant is able to secure more plant food than from the corresponding soil in the Eastern part of the State.

When fertilizers are used in Texas west of the Blackland section, it is suggested that somewhat smaller amounts be tried than is recommended for East Texas, unless the land is irrigated. Also, unless the land is irrigated, care should be taken that the fertilizer is in the firm soil in which the plants grow, not in the loose earth, which is likely to dry out.

Fertilizers for the Rio Grande Valley

The soils of the lower Rio Grande Valley are generally well supplied with plant food, especially with potash. When the soils are new, they may contain an excess of nitrogen, and tend to produce a heavy growth of stalk and leaves, with deficiency of fruit. Superphosphate is perhaps the best fertilizer to use in such soils, where there is reason to believe an abundance of nitrogen is present.

After having been under cultivation several years, these soils are likely to need nitrogen first, as the nitrogen is most readily exhausted. As it is desirable to avoid an excess of nitrogen, moderate quantities of nitrogen should be used at first. These soils are high in potash, and are less likely to need potash than the East Texas soils, which are lower in potash. However, some potash may be used, especially as the cropping is heavy, but there is no need at present for the percentage of potash to exceed the percentage of nitrogen.

Our suggestion at present for these soils would be then to begin with superphosphate, if the vegetative growth is very heavy. In succeeding years 10-10-0, 16-20-0, or 11-48-0 may be used or one of these may be used to begin with if vegetative growth is not excessive. In the course of time, when potash has been depleted by cropping, one would use such truck fertilizers as 6-12-6, 10-20-10, or 6-10-7.

Fertilizers for the Gulf Coastal Plains

There is considerable variation in the soils of the Gulf Coastal Plains. Some of the soils in the southern section are very sandy, and somewhat low in plant food. These should receive about the same fertilizer as the sandy lands of East Texas. Most of the soils are heavier and better supplied with plant food than the very sandy soils. The fertilizers suggested are the same as for the corresponding soils of the Rio Grande Valley. The heavy black soils (the Lake Charles soils) at the Experiment Station at Angleton respond well to superphosphate and to applications of nitrogen and phosphoric acid on cotton and corn.

Some of the soils of the Gulf Coastal Plains are poorly drained. They should be well drained and placed in good condition before any fertilizer is used, since applications of fertilizer will not remedy poor drainage.

FERTILIZERS SUGGESTED FOR THE VARIOUS CROPS

The recommendations given below represent the best present information for the use of fertilizers in Texas, and will be modified from time to time, as more experimental data are accumulated and further practical experience is secured.

Grades with the Same Ratios

Where a fertilizer of a given ratio is suggested, a different grade with the same ratio may be used, in such a quantity as to supply an equivalent amount of plant food. Where 4-12-4 is suggested, equivalent amounts of 3-10-3, 5-15-5, or 9-27-9, may be used, as these all have the same ratio of plant food, 1-3-1. Where 4-8-4 is suggested, equivalent amounts of 6-12-6, or 10-20-10, may be used, as they have the same ratio of plant food, 1-2-1.

Alfalfa

Soil recently put in alfalfa: Use 200 to 400 pounds per acre of superphosphate.

Soil in cultivation six years or longer (best to rotate): Use 200 to 400 pounds of superphosphate, or 200 to 600 pounds of 0-15-6.

Soils poor in lime should receive lime (Bulletin 243).

Asparagus

Apply 10 to 20 tons of well-rotted manure and 500 to 800 pounds to the acre of a 4-12-4 or 6-12-6 fertilizer when setting out the plants. Manure alone has given good results at both Balmorhea and Iowa Park. If the manure is not available, 600 to 900 pounds of the fertilizer could be used. Every spring apply 400 to 600 pounds of 6-12-6. Just before the cutting season is over, or soon after, apply 200 to 400 pounds of 4-8-4. Two top dressings of nitrate of soda, 100 pounds to the acre each, applied in the spring, would also be advisable in many cases.

Beans (garden) and Peas (garden or English)

An application of 300 to 500 pounds per acre of a 6-10-7 or 6-12-6 fertilizer is suggested, except in the lower Rio Grande Valley, where the use of 200 to 300 pounds of 11-48-0 pounds is suggested.

Beets, Carrots, Turnips and Radishes

From 300 to 700 pounds per acre of 6-12-6 or 5-15-5 are suggested for East Texas and 16-20-0 or 11-48-0 for the clay loam of the Rio Grande Valley and Gulf Coast.

Broccoli, Cabbage, Cauliflower, Mustard, and Spinach

From 300 to 700 pounds per acre of 6-12-6 or 5-15-5 may be used, supplemented by three top dressings of 50 to 100 pounds of nitrate of soda or sulphate of ammonia or other fertilizer containing only nitrogen, ten days or two weeks apart, beginning when the plants have begun to make a good growth. Excessive application of nitrogen and too rapid growth will impair the shipping quality.

The nitrate of soda or sulphate of ammonia should be sprinkled along the row, three or four inches from the plants, or applied broadcast after the dew has dried off or applied just before cultivation.

Corn

Loam or clay soils with clay or sandy clay subsoils, such as Susquehanna, Kirvin, Orangeburg, or similar soils, with legume rotation: Use 200 to 300 pounds per acre of 4-8-4, 6-9-3, or 4-10-0.

Loam or clay soils with clay or sandy clay subsoils, without legume rotation, in cultivation eleven years or more: Use 200 to 300 pounds of 4-8-4, 6-9-3, or 4-10-0.

Deep sandy soil: Use 200 to 300 pounds of 4-12-4. This is not a good corn soil.

Land which produces a heavy stalk, but does not fruit well: Use 200 pounds of 20 per cent superphosphate.

Black waxy land (Houston black clay), or heavy limestone land of Central Texas: A systematic rotation is needed first. Fertilizers are uncertain. A trial may be made of 200 to 400 pounds of 4-10-0 or 100 pounds of 16-20-0.

Side dressing: Corn may frequently use to advantage a side dressing of nitrate of soda, sulphate of ammonia, or other soluble nitrate, applied when the corn is knee high, especially when unfertilized corn follows crops that were previously fertilized.

Land fertilized the previous season: Where corn follows cotton that has been well fertilized the previous season, for example with a 4-8-4, or 4-12-4 fertilizer at the rate of 300 to 400 pounds or more per acre, apply 15 to 20 pounds of nitrogen as nitrate of soda, sulphate of ammonia, or a synthetic nitrogen product before planting or as a side dressing when the corn is 12 to 24 inches high.

Cotton

Loam soils with clay or sandy clay subsoils, such as Ruston, Kirvin, Susquehanna, Lufkin, or similar soils. Experiments of the Division of

Agronomy (see Bulletin No. 469), indicate that these soils respond to applications of nitrogen, phosphoric acid, and to some extent, of potash. If 200 to 400 pounds per acre is used, use 4-8-4, 6-9-3, or 4-12-4; if over 400 pounds is to be used, use 4-12-4, 4-8-4, or 6-9-3, or other fertilizers with a similar ratio of plant food.

Deep sandy soil, such as Norfolk sand. If 200 to 300 pounds or more is to be used, use 4-12-4; if 300 to 400 pounds or more is to be used, use 4-8-4 or other fertilizer with a similar ratio of plant food. However, these are not good cotton or corn soils and are better adapted to vegetables.

Land which produces an excessive stalk, and does not fruit well, chiefly bottom land: Use 200 to 400 pounds of 18 per cent or 20 per cent superphosphate. Nitrate of soda, sulphate of ammonia, or other nitrogenous fertilizer applied early at the rate of 100 to 200 pounds per acre sometimes gives good results on bottom lands which produce a moderately sized stalk.

Dark prairie soils in the Gulf Coast Prairie, especially the Lake Charles soils, are deficient first in phosphoric acid, as shown by results of trials with fertilizers at the Experiment Station at Angleton: Use 100 pounds of 18 or 20 per cent superphosphate or 200 to 600 pounds per acre of a 4-10-0 fertilizer, or 100 to 200 pounds of 16-20-0.

Black waxy land, such as Houston black clay or heavy limestone soils of Central Texas. A systematic rotation is needed first. These soils sometimes respond to applications of nitrogen and phosphoric acid, although fertilizers are uncertain. A trial may be made of 200 to 300 pounds of 4-10-0 or 6-9-3, or 100 to 200 pounds of 16-20-0.

Cantaloupes, Cucumbers, Squash, or Watermelons

On sandy loam soils: If 200 to 300 pounds per acre is applied, use 4-12-4 or 6-12-6. Larger applications are recommended, such as 300 to 500 pounds of 4-8-4 or 4-8-6. In southwest Texas, 300 to 400 pounds of 10-20-10 is suggested. An excess of nitrogen will produce a heavy growth of vine, but a deficiency of fruit. The remedy is to use more phosphoric acid or less nitrogen. Well-rotted manure should always be used with melons, if possible.

Eggplant, Okra, and Peppers

An application of 300 to 700 pounds of 6-12-6 or 4-8-6 is suggested for trial.

Figs

Recommendations for fertilizers for figs depend upon the nature of the soil and the size of the trees. On the heavy black prairie soils at

Angleton, phosphoric acid gave a slight increase in yield, while nitrogen and potash gave no appreciable increase in yield of figs. An application of 200 pounds per acre of superphosphate is suggested for such soils. Figs seem to do best on a soil containing lime.

For small trees on heavy black soil, 200 to 300 pounds to the acre of 4-10-0 is suggested. As the trees grow larger, the quantity of fertilizer may be increased to 600 to 1000 pounds to the acre, or a 16-20-0 fertilizer may be used in smaller amounts.

The fertilizer should be applied in the spring after danger of frost is past, and harrowed in. Weeds should be kept down, especially around young trees; otherwise, the fertilizer may help weeds to grow and thereby hold back the trees. Where a heavy crop of winter clover is turned under, the amount of nitrogen needed in commercial fertilizers is low.

Grapefruit or Orange Trees

According to Bulletin 145 of the California Agricultural Experiment Station, nitrogen is the chief plant food needed in California, and is best supplied in well-rotted manure; excess of nitrogen may cause "Mottle leaf."

A 16-20-0, 10-10-0, or 11-48-0 fertilizer may be used on Lower Valley soils, which are high in potash. On soils low in potash, a 10-20-10 may be desirable. Bearing trees ten years old may each receive 10 to 20 pounds of fertilizer each year.

Over-fertilized trees become affected with "die-back," especially if an excess of nitrogen is applied. Die-back is also caused by hardpan, alkali, or poor drainage. "Mottle leaf" or "Frenching" affects poorly nourished trees.

The soils on which citrus fruit are grown in Texas are generally higher in potash than in either phosphoric acid or nitrogen, and there appears no good reason at present to recommend fertilizers high in potash.

Onions

The use of 600 to 800 pounds per acre of 6-12-6, 6-9-3, or 6-10-7 is suggested. Under irrigation, the 6-12-6 fertilizer may be used at rates varying from 600 to 900 pounds per acre except on new land, when 1200 pounds per acre may be used. On some soils, especially in the Winter Garden District, potash is not needed and a 5-10-0 or 16-20-0 fertilizer may be used. (See Bulletin 524).

Peach or Plum Trees

Loam soils with clay or sandy clay subsoils, such as Orangeburg, Susquehanna, or similar types: Use 200 to 600 pounds per acre of 4-10-0

or 4-12-4. It may also be applied to individual trees at the rate of 1 pound per inch of diameter of the tree at the beginning of the growing season. When the trees are bearing, use, in addition, 200 pounds or more of 10-10-0, increasing the quantity as the trees grow older. According to experiments made in other states and observations on commercial orchards in Texas, nitrogen is the only element needed for complete crops of peaches, which can be supplied by cyanamid or other nitrogenous fertilizers.

Deep sandy soil, such as Norfolk sand: Use 200 to 600 pounds of 4-12-4 or 4-8-4.

Clay soils and bottom lands: Use 200 to 600 pounds of 4-10-0.

Potatoes, Sweet

Loam or sandy loam soils with clay or sandy loam subsoils: 300 to 600 pounds per acre of 4-12-4, or 6-12-6 may be used. Deep sandy soil: Use 200 to 500 pounds of 6-12-6 or 4-8-6. Excess of nitrogen will produce excessive growth of vine and deficiency of tubers. The use of manure is desirable in growing sweet potatoes, but heavy applications of barnyard manure produce conditions favorable for disease.

Potatoes, Irish

On loam or sandy soils, 300 to 700 pounds per acre of 6-12-6 or 4-12-4 or 4-8-6 is suggested. In East Texas 500 to 800 pounds of 4-8-4 or 6-9-3 may be used. In the Rio Grande Valley, 16-20-0 or 11-48-0 gives good results.

Rice

Experiments conducted in the Beaumont Substation from 1915 to 1928 show that 100 pounds to the acre of sulphate of ammonia made the largest increase in yield and has been the most profitable treatment used (see Bulletin 398, Fertilizers for Rice in Texas). The sulphate of ammonia should be applied at the time of planting, or not later than six weeks after planting the rice. Superphosphate, and phosphate and potash gave profitable returns also, though not so great as the sulphate of ammonia.

Sorghum

An application of 200 to 300 pounds per acre of 4-8-4, 6-9-3, or 4-10-0 is suggested.

Strawberries

An application of 400 to 600 pounds per acre of 4-8-4, 4-12-4, or 6-12-6 may be made at the time of setting out the plants. In the spring, just

before blossoming, an early application of the same fertilizer should be used in about the same quantity, put as near the row as convenient, and worked into the soil lightly. Another application in the fall is also desirable, to stimulate the growth of the plants in the cold season. Side dressings have not been found effective in the Winter Garden District of Southwestern Texas.

Tomatoes

Loam soils with clay or sandy clay subsoils of East Texas, such as the Ruston, Kirvin, or Nacogdoches: If 400 to 600 pounds per acre is used, use 4-8-6 or 6-12-6; if 500 to 1000 pounds, use 4-8-6, 4-8-4, 4-12-4, or 6-9-3. Less than 500 pounds of fertilizer may be supplemented by 100 to 200 pounds of nitrate of soda or sulphate of ammonia if there is no tendency to excessive growth of vine.

Deep sandy soil, such as Norfolk sand: If 200 to 500 pounds per acre is used, use 4-8-6, or 4-8-4; if 500 to 1000 pounds is used, use 4-8-6. Less than 500 pounds of fertilizer may be supplemented by 100 to 200 pounds of nitrate of soda or sulphate of ammonia if there is no tendency to excessive growth of vine.

Winter Garden and Rio Grande Valley: Superphosphate alone at the rate of 200 to 300 pounds per acre has been found to give good results. A 16-20-0 or 11-48-0 at the rate of 200 to 400 pounds per acre may be used.

Land which produces an excessive vine: Use 200 to 400 pounds of superphosphate, 18 per cent or 20 per cent. Vines which grow large and do not fruit may sometimes be caused to fruit well without fertilizer if the vines are properly pruned. One method is to remove suckers every week beginning a week after the plants are set out and continuing until a week after the top is pinched off. The top is pinched off as soon as the third cluster is formed. Another method of pruning used where the growth of vine is excessive is to allow the first sucker to come out to form a fork and prune off all others. The top of the main stalk is pinched off immediately after the third cluster of fruit is formed, and the sucker is pinched off immediately after the second cluster is formed on it. According to New Hampshire Bulletin 28, excess of potash delays maturity of tomatoes, and phosphoric acid hastens maturity.

Home Gardens

Home gardens frequently receive large quantities of manure, with little or no applications of phosphoric acid or potash. This results in an unbalanced condition of the plant food in the soil, resulting in excessive growth of leaves and stems and insufficient fruit. The best fertilizer to apply when heavy applications of manure have been made would be 200

to 400 pounds per acre of superphosphate, or 0-15-6 fertilizer. If the rows are 2 feet apart, one pound to 50 feet of row is equal to about 400 pounds fertilizer per acre.

Where applications of manure have been made only in moderate amounts, 4-12-4 or 6-12-6 would probably be satisfactory at the rate of about 2 pounds to 50 feet of row. If light applications of manure are made, or none at all, 4-8-4, 6-12-6, or 4-8-6 at the rate of 1½ to 3 pounds to 50 feet of row would be suggested, and top dressings with nitrate of soda or sulphate of ammonia at the rate of ½ pound to 50 feet of row might also be tried. The fertilizer is best placed in a narrow band about two inches from the seed or plants and on the same level or a little below. If placed in direct contact with either seed or plants or too near to them, it may cause injury.

Shade Trees and Ornamental Shrubs

Shade trees and ornamental shrubs are probably benefited by fertilizer, but few fertilizer experiments have been made on such plants. The fertilizer should be added in such a way as to aid in developing the deep roots. Plants with surface roots extensively developed are likely to suffer from insufficient water in dry weather, or even to die. Where serious drouths occur, the development of deep-feeding roots by trees and shrubs is exceedingly important. If a complete fertilizer is used, it is well to put it down in holes 15 to 20 inches deep or deeper. The holes may be punched with a pointed iron bar ½ to ¾ inches in diameter and 24 inches long, with a bar about 12 inches long welded across the top to serve as a handle. Four holes, about one foot from the plant are sufficient for rose bushes or similar plants. The fertilizer for trees should be distributed in 15 to 24 holes around in a circle a little larger than the spread of the branches. The holes should be completely filled with the fertilizer. For large trees, more holes should be punched and filled with the fertilizer. Manure may be put down in the same way, but the holes must be larger. Sulphate of ammonia, nitrate of soda, or some other nitrogenous fertilizer, or a complete mixed fertilizer such as a 4-12-4, 6-12-6, or 4-8-4, may be used at the rate of about one-half pound for each inch in diameter of the tree or shrub. Sulphate of ammonia would probably be best on limestone soils or basic soils, such as those of the blackland prairie region, and west or south of it. East of the black lands, especially on the sandy soils, a complete mixed fertilizer would probably be best, though a nitrogenous fertilizer might be sufficient.

Lawns

An application of either sulphate of ammonia, cottonseed meal, 4-12-4 or 4-8-4 fertilizer at the rate of one to 2 pounds per hundred square

feet is suggested. The fertilizer should be applied in the spring evenly, when the grass is dry, and then wet down thoroughly with the hose. If the grass is wet when the fertilizer is applied, the fertilizer will stick to it and probably burn it. The fertilizer can be applied broadcast by hand but it is more readily applied by a special distributor, which runs as easily as a lawn mower. If the soil is sandy or deficient in humus, an application of dried sheep or goat manure or well-rotted barnyard manure is suggested at the rate of 10 pounds to 100 square feet. This manure should be applied in the late fall or early spring.

SUMMARY

This Bulletin contains a report of the Texas Fertilizer Control for 1935-6 and information regarding the use of fertilizer.

An explanation of terms is given.

Sales of fertilizer in Texas were 60,016 tons in 1935-36. They were 59,480 tons in 1934-35. The tonnage for other years is given. The tons reported do not include cottonseed meal sold as a feed but used as a fertilizer.

The average selling prices and composition of the different kinds of fertilizer are given.

Available phosphoric acid costs less in 20 per cent superphosphate than in 18 per cent, though the difference was small. Kainit is an expensive source of potash, muriate of potash being much cheaper.

Nitrogen costs much less in sulphate of ammonia than in nitrate of soda. Plant food costs less per pound in the more concentrated fertilizers than in less concentrated fertilizer, though the former costs more per ton.

The grades of fertilizer to be sold next season are given.

Information is given regarding fertilizers, and suggestions are made for the fertilization of various crops in Texas.

A table is given showing the relation of the guaranteed valuation to the valuation delivered by the various manufacturers.

Analysis of 1033 samples collected by the inspector are given.

Table 7. Analysis of commercial fertilizer, season 1935-36

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	American Cyanamid Company, New York, New York				
	Granular 'Aero' 21% Cyanamid Guarantee	21.00	.....	.....	50.40
50317	Analysis	21.41	.....	.....	51.38
50465	Analysis	21.04	.....	.....	50.50
	Granular 'Aero' 32% Superphosphate Guarantee	.....	32.00	.....	35.20
50308	Analysis	.....	32.40	.....	35.64
51281	Analysis	.....	33.40	.....	36.74
51284	Analysis	.....	33.19	.....	36.51
	'Ammo-Phos' 11-48-0 Guarantee	11.00	48.00	.....	79.20
50266	Analysis	11.08	48.68	.....	80.14
50316	Analysis	11.01	48.02	.....	79.24
50318	Analysis	11.02	49.07	.....	80.43
51282	Analysis	11.17	48.77	.....	80.46
51285	Analysis	11.16	49.02	.....	80.70
51288	Analysis	11.31	48.65	.....	80.66
	'Ammo-Phos' 16-20-0 Guarantee	16.00	20.00	.....	60.40
50270	Analysis	16.30	21.47	.....	62.74
50297	Analysis	16.06	20.26	.....	60.83
50304	Analysis	16.02	21.40	.....	61.99
50307	Analysis	16.40	21.41	.....	62.91
50339	Analysis	16.06	21.12	.....	61.77
51283	Analysis	16.29	21.38	.....	62.62
51286	Analysis	16.19	21.04	.....	62.00
51287	Analysis	16.19	21.12	.....	62.09
	Armour Fertilizer Works, Houston, Fort Worth, Texas and New Orleans, La.				
	Armour's Big Crop Fertilizer 3103 Guarantee	3.00	10.00	3.00	21.50
50354	Analysis	3.20	10.56	3.04	22.64
50405	Analysis	3.12	10.64	**2.83**	22.30
50782	Analysis	3.11	10.76	3.05	22.66
50983	Analysis	3.04	10.15	**2.73**	**21.47**
51142	Analysis	3.19	10.68	3.05	22.77
	Armour's Big Crop Fertilizer 4-8-4 Guarantee	4.00	8.00	4.00	22.80
50324	Analysis	**3.86**	8.86	4.28	23.72
50330	Analysis	**3.88**	8.59	4.08	23.25
50423	Analysis	**3.78**	8.25	4.29	22.87
50472	Analysis	**3.90**	8.76	4.10	23.51
50506	Analysis	**3.81**	8.61	4.04	23.05
50644	Analysis	**3.87**	8.71	**3.97**	23.24
50750	Analysis	**3.70**	9.52	**3.54**	23.24
50856	Analysis	**3.99**	8.78	4.01	23.65
50887	Analysis	4.10	8.79	4.13	24.05
50904	Analysis	4.04	8.90	4.03	23.92
50973	Analysis	**3.80**	8.56	4.01	22.95
50982	Analysis	**3.96**	8.58	4.17	23.53
51214	Analysis	**3.82**	8.48	4.34	23.27
	Armour's Big Crop Fertilizer 4-8-6 Guarantee	4.00	8.00	6.00	25.00
50440	Analysis	4.10	8.52	6.06	25.88
50473	Analysis	**3.93**	8.32	6.34	25.55
50490	Analysis	**3.98**	8.73	**5.77**	25.50
50539	Analysis	4.14	8.36	**5.78**	25.50
50617	Analysis	4.03	8.23	**5.89**	25.20
50655	Analysis	**3.80**	8.41	**5.93**	**24.89**
50853	Analysis	**3.97**	8.29	6.34	25.62
50911	Analysis	4.19	8.34	**5.64**	25.43
50945	Analysis	4.02	8.45	6.13	25.69
51041	Analysis	4.18	8.53	**5.77**	25.76
51216	Analysis	4.09	8.52	**5.64**	25.39
	Armour's Big Crop Fertilizer 4810 Guarantee	4.00	8.00	10.00	29.40
50522	Analysis	**3.67**	8.14	10.01	**28.77**
50654	Analysis	**3.67**	8.31	10.39	**29.38**
	Armour's Big Crop Fertilizer 4107 Guarantee	4.00	10.00	7.00	28.30
50353	Analysis	4.22	10.26	**6.80**	28.90
50636	Analysis	4.12	10.44	7.23	29.32

Table 7. Analysis of commercial fertilizer, season 1935-36—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found per ton
	Armour Fertilizer Works, Houston, Fort Worth, Texas and New Orleans, La.—Continued.				
	Armour's Big Crop Fertilizer 4124 Guarantee	4.00	12.00	4.00	27.20
50360	Analysis	4.07	12.30	4.29	28.02
50545	Analysis	4.08	12.21	4.14	27.77
50577	Analysis	**3.99**	12.34	4.03	27.58
50626	Analysis	4.03	12.21	4.27	27.80
50646	Analysis	4.25	12.25	4.38	28.50
50648	Analysis	4.02	12.52	4.18	28.02
50671	Analysis	**3.95**	**11.81**	**3.89**	**26.75**
50699	Analysis	4.05	12.47	4.18	28.04
50967	Analysis	4.08	12.53	4.18	28.17
51036	Analysis	**3.86**	12.80	**3.76**	27.48
51045	Analysis	4.14	12.25	4.07	27.90
51063	Analysis	4.20	12.38	**3.81**	27.89
51217	Analysis	**3.91**	12.58	**3.56**	**27.14**
	Armour's Big Crop Fertilizer 5155 Guarantee	5.00	15.00	5.00	34.00
50301	Analysis	5.02	15.58	5.14	34.84
50313	Analysis	5.16	**14.42**	5.43	34.21
50336	Analysis	5.24	15.66	5.00	35.31
51035	Analysis	5.30	15.30	**4.64**	34.65
	Armour's Big Crop Fertilizer 6107 Guarantee	6.00	10.00	7.00	33.10
50271	Analysis	6.13	10.37	7.02	33.84
50274	Analysis	6.09	10.46	7.58	34.47
50335	Analysis	6.02	10.13	7.42	33.75
50649	Analysis	6.04	10.52	7.29	34.09
50720	Analysis	6.42	10.45	**6.72**	34.30
50786	Analysis	6.31	10.53	7.09	34.52
50888	Analysis	6.05	10.13	7.42	33.82
50903	Analysis	6.18	10.61	7.34	34.57
51058	Analysis	6.26	10.11	7.02	33.86
	Armour's Big Crop Fertilizer 6126 Guarantee	6.00	12.00	6.00	34.20
50257	Analysis	6.32	12.03	**5.37**	34.21
50269	Analysis	6.47	12.10	**5.65**	35.06
50275	Analysis	6.19	12.38	6.54	35.67
50337	Analysis	6.24	12.28	6.10	35.20
50454	Analysis	6.50	12.26	6.94	36.72
50629	Analysis	**5.90**	12.82	6.18	35.06
50635	Analysis	6.24	12.55	6.74	36.20
50643	Analysis	**5.95**	12.69	6.37	35.25
50681	Analysis	6.10	12.47	6.64	35.66
50744	Analysis	6.26	13.09	6.02	36.04
50787	Analysis	6.15	13.45	**5.68**	35.81
50994	Analysis	**5.78**	12.67	6.02	34.43
50997	Analysis	**5.90**	12.47	6.21	34.71
	Armour's Big Crop Fertilizer 9-27-9 Guarantee	9.00	27.00	9.00	61.20
50279	Analysis	9.85	**21.72**	**7.65**	**55.95**
	Armour's Big Crop Nitrate of Soda 16% Guarantee	16.00	.....	.....	38.40
50256	Analysis	16.30	.....	.....	39.12
50429	Analysis	16.13	.....	.....	38.71
51012	Analysis	16.52	.....	.....	39.65
	Armour's Big Crop Raw Bone Meal Guarantee	3.70	*22.00	.....	24.72
50427	Analysis	3.77	*22.33	.....	25.13
51011	Analysis	4.50	***21.94**	.....	26.00
51089	Analysis	5.25	***19.61**	.....	26.72
	Armour's Big Crop Sulphate of Ammonia Guarantee	20.00	.....	.....	48.00
50258	Analysis	20.70	.....	.....	49.68
50296	Analysis	20.44	.....	.....	49.06
50325	Analysis	20.86	.....	.....	50.06
	Armour's Big Crop Superphosphate 18% Guarantee	.....	18.00	.....	19.80
50428	Analysis	.....	18.53	.....	20.38
50480	Analysis	.....	18.45	.....	20.30
50588	Analysis	.....	18.93	.....	20.82
50623	Analysis	.....	18.24	.....	20.06
50653	Analysis	.....	18.99	.....	20.89
50998	Analysis	.....	18.96	.....	20.86
51013	Analysis	.....	18.84	.....	20.72

*Total phosphoric acid

Table 7. Analysis of commercial fertilizer, season 1935-36—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	Armour Fertilizer Works, Houston, Fort Worth, Texas and New Orleans, La.—Continued.				
	Armour's Big Crop Superphosphate 20% Guarantee	.....	20.00	.....	22.00
50523	Analysis	.....	20.00	.....	22.00
50647	Analysis	.....	20.41	.....	22.45
50721	Analysis	.....	20.61	.....	22.67
50995	Analysis	.....	20.25	.....	22.28
	Armour's Plow Brand Fertilizer No. 4-12-4 Guarantee	4.00	12.00	4.00	27.20
50456	Analysis	4.13	12.15	4.18	27.88
51156	Analysis	4.07	12.34	**3.84**	27.56
	Barrett Company, New York, New York				
	Arcadian the American Nitrate of Soda Guarantee	16.00	.....	.....	38.40
50262	Analysis	16.40	.....	.....	39.36
50310	Analysis	16.29	.....	.....	39.10
	Sulphate of Ammonia Guarantee	20.00	.....	.....	48.00
50261	Analysis	20.96	.....	.....	50.30
50893	Analysis	21.01	.....	.....	50.42
	Blume System Tree Experts, Houston, Texas				
	Blume's Plant Special Guarantee	3.00	10.00	3.00	21.50
50687	Analysis	3.95	11.81	3.34	26.14
	Bryan Cotton Oil & Fertilizer Company, Bryan, Texas				
	Star Brand Cotton & Corn Fertilizer Guarantee	3.00	10.00	3.00	21.50
50463	Analysis	2.53	10.10	4.61	22.25
50768	Analysis	3.98	10.85	3.72	25.58
	Star Brand Special Fertilizer Guarantee	4.00	12.00	4.00	27.20
50464	Analysis	4.06	**11.98**	5.71	29.20
50766	Analysis	**3.87**	12.08	4.24	27.24
	Star Brand Superphosphate Guarantee	.....	20.00	.....	22.00
50461	Analysis	.....	21.38	.....	23.52
50770	Analysis	.....	20.84	.....	22.92
	Star Brand Tomato Fertilizer Guarantee	6.00	12.00	6.00	34.20
50462	Analysis	6.06	12.31	9.28	38.29
50767	Analysis	6.48	13.59	7.66	38.93
	Star Brand Truck Fertilizer Guarantee	4.00	8.00	4.00	22.80
50769	Analysis	4.45	9.11	4.21	25.33
	Campbell Fertilizer Company, Houston, Texas				
	3-10-3 All-Weather Organic Base Fertilizer Guarantee	3.00	10.00	3.00	21.50
50695	Analysis	2.53	11.73	3.84	23.19
50702	Analysis	3.10	10.91	3.77	23.59
	4-8-4 All-Weather Organic Base Fertilizer Guarantee	4.00	8.00	4.00	22.80
50693	Analysis	3.42	11.23	6.52	26.61
50703	Analysis	3.89	8.93	6.02	25.78
	4-8-6 All-Weather Organic Base Fertilizer Guarantee	4.00	8.00	6.00	25.00
50340	Analysis	3.29	7.84	7.25	**24.50**
50682	Analysis	**3.51**	9.61	10.39	30.42
50694	Analysis	4.41	8.34	7.59	28.10
50704	Analysis	4.04	8.84	8.18	28.42
51028	Analysis	3.63	8.10	9.29	27.84
	4-12-4 All-Weather Organic Base Fertilizer Guarantee	4.00	12.00	4.00	27.20
50351	Analysis	3.38	**11.43**	5.28	**26.49**
	6-12-6 All-Weather Organic Base Fertilizer Guarantee	6.00	12.00	6.00	34.20
50350	Analysis	**5.01**	12.19	8.31	34.57
51029	Analysis	**5.44**	12.49	7.08	34.59
	3-10-0 All-Weather Rice Special Guarantee	3.00	10.00	.....	18.20
50673	Analysis	2.98	10.50	.....	18.70
50683	Analysis	2.69	11.26	.....	18.85
	All-Weather Rice Fertilizer 4-10-0 Guarantee	4.00	10.00	.....	20.60
51033	Analysis	4.10	**9.74**	.....	**20.55**
	All-Weather 18% Superphosphate Guarantee	.....	18.00	.....	19.80
50684	Analysis	.....	21.01	.....	23.11
51034	Analysis	.....	19.73	.....	21.70
	Chilean Nitrate Sales Corporation, 120 Broadway, New York, New York				
	Champion Brand Chilean 16% Nitrate of Soda Guarantee	16.00	.....	.....	38.40
50260	Analysis	16.54	.....	.....	39.70
50942	Analysis	16.16	.....	.....	38.78

Table 7. Analysis of commercial fertilizer, season 1935-36—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	David Hardie Seed Company, Dallas, Texas				
	Hardie's All-Purpose Fertilizer Guarantee	4.00	12.00	4.00	27.20
50844	Analysis	4.09	12.13	4.16	27.74
	Hardie's Nu-Green Lawn Dressing Guarantee	10.00	6.00	4.00	35.00
50843	Analysis	**9.77**	6.33	4.20	35.03
	Davison-Pick Fertilizers, Inc., New Orleans, La.				
	Bull Dog Special No. 3103 Guarantee	3.00	10.00	3.00	21.50
50565	Analysis	3.27	10.86	3.06	23.17
50980	Analysis	3.52	10.42	3.09	23.31
51220	Analysis	**2.87**	10.36	3.36	21.99
	Bull Dog Special No. 484 Guarantee	4.00	8.00	4.00	22.80
50444	Analysis	4.29	8.79	4.09	24.47
50664	Analysis	4.01	8.05	**3.84**	**22.70**
50808	Analysis	4.17	8.83	4.20	24.34
50813	Analysis	4.37	8.40	4.16	24.31
50880	Analysis	4.41	8.56	**3.95**	24.35
50981	Analysis	4.35	8.24	**3.64**	23.50
51085	Analysis	**3.65**	8.36	4.18	**22.56**
51153	Analysis	4.06	8.47	4.13	23.60
	Bull Dog Special No. 486 Guarantee	4.00	8.00	6.00	25.00
50495	Analysis	4.14	8.68	**5.39**	25.42
50529	Analysis	4.40	8.56	6.10	26.69
50560	Analysis	4.10	8.75	**5.42**	25.43
50807	Analysis	4.13	8.81	**5.76**	25.94
50881	Analysis	**3.71**	8.65	**5.62**	**24.60**
50931	Analysis	**3.94**	8.70	**5.71**	25.31
51052	Analysis	4.22	8.98	**5.64**	26.21
	Bull Dog Special No. 4124 Guarantee	4.00	12.00	4.00	27.20
50496	Analysis	**3.80**	12.45	4.24	27.48
50566	Analysis	**3.82**	12.75	4.05	27.66
50592	Analysis	4.00	12.70	**3.85**	27.81
51053	Analysis	4.04	12.56	**3.88**	27.79
51195	Analysis	4.17	12.54	4.04	28.24
	Bull Dog Special No. 6107 Guarantee	6.00	10.00	7.00	33.10
50572	Analysis	**5.95**	10.40	**6.77**	33.17
50593	Analysis	6.18	11.89	**6.75**	35.34
50627	Analysis	6.06	10.53	**6.75**	33.55
51206	Analysis	6.24	10.57	**6.69**	33.97
	Bull Dog Special No. 6126 Guarantee	6.00	12.00	6.00	34.20
50941	Analysis	6.08	12.46	**5.64**	34.50
50979	Analysis	**5.95**	12.45	**5.85**	34.42
	Bull Dog Special No. 10010 Guarantee	10.00	.....	10.00	35.00
51165	Analysis	**9.80**	.....	**9.22**	**33.66**
	Bull Dog Superphosphate No. 18 Guarantee	.....	18.00	.....	19.80
50645	Analysis	.....	19.09	.....	21.00
50932	Analysis	.....	18.10	.....	19.91
	East Texas Cotton Oil Company, Tyler, Texas				
	Etco 4-8-6 Fertilizer Guarantee	4.00	8.00	6.00	25.00
50442	Analysis	4.02	8.28	**5.84**	25.18
50622	Analysis	**3.83**	8.11	6.19	**24.92**
50758	Analysis	4.02	8.45	**5.67**	25.19
51094	Analysis	4.01	**7.84**	6.06	**24.91**
51196	Analysis	4.03	8.35	6.34	25.83
51210	Analysis	**3.79**	8.01	**5.87**	**24.37**
	Etco 4-12-4 Fertilizer Guarantee	4.00	12.00	4.00	27.20
50441	Analysis	4.20	12.27	4.02	28.00
50458	Analysis	4.23	**11.75**	7.23	31.03
50757	Analysis	4.12	12.75	4.34	28.69
51155	Analysis	4.19	12.23	4.45	28.41
51200	Analysis	4.04	12.21	4.28	27.84
51213	Analysis	4.15	12.47	4.42	28.54
	Etco 6-9-3 Fertilizer Guarantee	6.00	9.00	3.00	27.60
50759	Analysis	6.00	9.32	3.32	28.30
51095	Analysis	6.01	10.05	3.22	29.02

Table 7. Analysis of commercial fertilizer, season 1935-36—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	East Texas Cotton Oil Company, Tyler, Texas—Continued				
	Etco 6-10-7 Fertilizer Guarantee	6.00	10.00	7.00	33.10
50621	Analysis	**5.76**	10.75	**6.11**	**32.37**
51192	Analysis	6.19	10.46	**6.33**	33.33
	Etco Potato Producer Guarantee	4.00	8.00	4.00	22.80
50459	Analysis	4.06	8.24	4.49	23.74
51154	Analysis	**3.72**	8.45	**3.54**	**22.12**
	Etco Verifine Guarantee	6.00	12.00	6.00	34.20
50450	Analysis	**5.89**	12.75	**3.44**	**31.95**
	Etco Sulphate of Ammonia Guarantee	20.00	.....	.....	48.00
51201	Analysis	20.22	.....	.....	48.53
	Etco 18% Superphosphate Guarantee	.....	18.00	.....	19.80
50443	Analysis	.....	19.19	.....	21.11
	Etco 20% Superphosphate Guarantee	.....	20.00	.....	22.00
51197	Analysis	.....	21.29	.....	23.42
51209	Analysis	.....	21.23	.....	23.35
	Goldenrod 4-8-6 Fertilizer Guarantee	4.00	8.00	6.00	25.00
51091	Analysis	**3.82**	8.47	6.06	25.16
51194	Analysis	**3.76**	9.18	**5.40**	25.06
51221	Analysis	**3.83**	8.42	6.00	25.05
	Goldenrod 4-12-4 Fertilizer Guarantee	4.00	12.00	4.00	27.20
51090	Analysis	4.17	12.23	4.53	28.44
	Goldenrod 6-10-7 Guarantee	6.00	10.00	7.00	33.10
50451	Analysis	**5.82**	10.80	**6.34**	**32.82**
	Goldenrod Meal Formula Guarantee	3.00	10.00	3.00	21.50
51193	Analysis	3.04	10.43	3.10	22.18
	Farmers Cotton Oil Company, Winnsboro, Texas				
	Farmers Fertilizer No. 484 Guarantee	4.00	8.00	4.00	22.80
50834	Analysis	4.16	8.49	4.07	23.80
	Farmers Fertilizer No. 486 Guarantee	4.00	8.00	6.00	25.00
50517	Analysis	4.01	8.19	6.35	25.62
50836	Analysis	**3.72**	8.82	6.04	25.27
51189	Analysis	**3.84**	8.72	6.09	25.51
	Farmers Fertilizer No. 4124 Guarantee	4.00	12.00	4.00	27.20
50519	Analysis	4.14	**11.51**	4.60	27.66
51188	Analysis	4.38	12.26	4.36	28.80
	Farmers 18% Superphosphate Guarantee	.....	18.00	.....	19.80
50835	Analysis	.....	18.85	.....	20.74
51190	Analysis	.....	18.45	.....	20.30
	Federal Chemical Company, Inc., Shreveport, La.				
	Daybreak Dixie Special Guarantee	4.00	8.00	4.00	22.80
50475	Analysis	**3.90**	**7.94**	4.29	22.81
50810	Analysis	4.11	8.22	4.29	23.62
50837	Analysis	4.27	**7.89**	4.09	23.43
51084	Analysis	**3.96**	**7.91**	4.37	23.01
51148	Analysis	**3.95**	8.19	4.28	23.20
51279	Analysis	4.10	8.01	4.22	23.29
	Daybreak Double Duty Guarantee	4.00	12.00	4.00	27.20
51199	Analysis	4.03	**11.68**	4.04	**26.96**
	Daybreak Favorite Fertilizer Guarantee	3.00	10.00	3.00	21.50
50966	Analysis	3.10	10.43	3.12	22.34
51212	Analysis	3.06	10.34	3.38	22.43
51247	Analysis	3.06	10.38	3.27	22.36
	Daybreak Special Mixture Guarantee	6.00	10.00	7.00	33.10
51248	Analysis	**5.89**	10.53	**6.01**	**32.33**
	Daybreak 18% Superphosphate Guarantee	.....	18.00	.....	19.80
51149	Analysis	.....	**17.77**	.....	**19.55**
51211	Analysis	.....	19.04	.....	20.94
	Daybreak Truckers Special Guarantee	4.00	8.00	6.00	25.00
50474	Analysis	**3.83**	8.47	**5.79**	**24.88**
50497	Analysis	**3.78**	**7.87**	6.31	**24.67**
50520	Analysis	**3.86**	8.17	**5.56**	**24.37**
50540	Analysis	4.10	8.18	6.04	25.48

Table 7. Analysis of commercial fertilizer, season 1935-36—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	Federal Chemical Company, Inc., Shreveport, La. —Continued.				
	Daybreak Truckers Special—Continued—Guarantee	4.00	8.00	6.00	25.00
50809	Analysis	4.02	8.55	6.13	25.80
50838	Analysis	4.05	7.77	6.23	25.12
51198	Analysis	4.03	8.10	6.33	25.54
	Meridian 4-8-10 Guarantee	4.00	8.00	10.00	29.40
50827	Analysis	4.13	8.45	10.50	30.76
	Meridian Home Mixture Guarantee	3.00	10.00	3.00	21.50
50563	Analysis	2.78	10.46	3.14	21.63
50688	Analysis	2.97	10.48	3.27	22.26
50891	Analysis	3.07	10.22	3.26	22.20
50964	Analysis	3.04	10.02	3.19	21.83
51059	Analysis	3.04	10.27	3.08	21.99
	Meridian Magnolia State Formula Guarantee	4.00	8.00	4.00	22.80
50476	Analysis	3.93	7.81	4.37	22.83
50488	Analysis	4.06	8.68	4.10	23.80
50802	Analysis	4.04	8.69	4.28	23.97
50826	Analysis	4.06	8.49	4.24	23.74
51150	Analysis	4.08	8.32	4.30	23.67
	Meridian Perfect Guano Guarantee	6.00	12.00	6.00	34.20
50410	Analysis	5.82	12.94	5.69	34.46
50455	Analysis	6.03	11.09	6.34	33.64
50471	Analysis	5.74	12.17	6.16	33.95
50738	Analysis	5.92	11.73	6.51	34.27
	Meridian Perfection Compound Guarantee	4.00	12.00	4.00	27.20
50421	Analysis	3.92	11.49	4.13	26.59
50479	Analysis	3.81	11.08	4.06	25.80
50599	Analysis	3.89	11.66	4.15	26.74
50628	Analysis	3.89	11.83	4.28	27.06
50890	Analysis	4.00	12.29	4.40	27.96
50944	Analysis	4.08	12.96	4.07	28.53
51060	Analysis	4.13	12.09	4.32	27.96
51133	Analysis	4.03	12.70	4.22	28.28
	Meridian Perfection Formula Guarantee	6.00	9.00	3.00	27.60
50604	Analysis	5.82	8.78	3.67	27.67
	Meridian Southern Mixture Guarantee	4.00	10.00	.....	20.60
50365	Analysis	4.76	9.76	.....	22.16
	Meridian Special Mixture Guarantee	6.00	10.00	7.00	33.10
50364	Analysis	6.00	10.08	7.45	33.69
50600	Analysis	6.02	10.24	7.12	33.54
50737	Analysis	6.17	10.47	7.18	34.23
50854	Analysis	5.84	10.75	7.18	33.75
	20% Kainit Guarantee	.....	.....	20.00	22.00
50689	Analysis	.....	.....	18.78	20.66
	Meridian 18% Superphosphate Guarantee	.....	18.00	.....	19.80
50690	Analysis	.....	19.92	.....	21.91
50943	Analysis	.....	18.34	.....	20.17
	Meridian Improved Superphosphate Guarantee	.....	20.00	.....	22.00
50478	Analysis	.....	20.53	.....	22.58
	Meridian 20% Superphosphate Guarantee	.....	20.00	.....	22.00
51082	Analysis	.....	20.93	.....	23.02
	Meridian Trucker's Special Guarantee	4.00	8.00	6.00	25.00
50422	Analysis	3.90	7.68	6.07	24.49
50470	Analysis	4.04	8.37	5.78	25.27
50477	Analysis	3.83	8.32	6.16	25.12
50489	Analysis	4.02	8.43	6.11	25.64
50538	Analysis	3.86	7.64	6.19	24.47
50776	Analysis	4.02	8.08	6.25	25.42
50804	Analysis	4.15	8.21	6.02	25.61
50857	Analysis	3.71	7.22	6.04	23.48
50929	Analysis	3.93	8.13	6.10	25.08
51081	Analysis	4.07	7.78	6.50	25.48
51183	Analysis	3.97	7.59	6.04	24.52
51204	Analysis	4.11	7.79	6.04	25.07

Table 7. Analysis of commercial fertilizer, season 1935-36—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	Fidelity Chemical Corporation, Houston, Texas				
	Fidelity 3-10-3 Fertilizer Guarantee	3.00	10.00	3.00	21.50
50282	Analysis	3.50	**9.84**	3.38	22.94
50575	Analysis	3.26	10.65	3.17	23.03
50581	Analysis	3.22	10.22	3.11	22.39
50660	Analysis	3.22	10.40	3.07	22.55
50696	Analysis	3.16	10.37	3.07	22.37
	Fidelity 4-8-4 Fertilizer Guarantee	4.00	8.00	4.00	22.80
50327	Analysis	**3.80**	8.36	4.40	23.16
50386	Analysis	4.24	8.65	4.15	24.27
50582	Analysis	4.07	8.20	4.25	23.47
50615	Analysis	4.03	8.47	4.03	23.42
50659	Analysis	4.84	8.70	**3.63**	25.18
50670	Analysis	4.31	9.03	4.26	24.96
50999	Analysis	4.18	8.02	4.52	23.82
51037	Analysis	4.75	8.46	**3.91**	25.01
51126	Analysis	4.84	8.42	**3.85**	25.12
	Fidelity 4-8-6 Fertilizer Guarantee	4.00	8.00	6.00	25.00
50322	Analysis	4.17	8.59	5.34	25.33
50343	Analysis	4.28	8.02	6.09	25.79
50344	Analysis	4.15	8.30	**5.74**	25.40
50385	Analysis	4.28	8.81	**5.79**	26.33
50700	Analysis	4.32	**7.85**	6.54	26.20
50919	Analysis	4.64	8.46	6.04	27.09
51030	Analysis	4.28	8.34	6.02	26.06
	Fidelity 4-10-0 Fertilizer Guarantee	4.00	10.00	.....	20.60
50363	Analysis	4.22	10.16	.....	21.31
	Fidelity 4-12-4 Fertilizer Guarantee	4.00	12.00	4.00	27.20
50273	Analysis	**3.89**	12.43	4.34	27.78
50286	Analysis	4.11	12.47	4.18	28.18
50323	Analysis	4.20	**11.87**	4.60	28.20
50346	Analysis	**3.93**	12.26	**3.93**	27.24
50347	Analysis	**3.78**	12.48	**3.82**	**27.00**
50357	Analysis	**3.81**	12.34	4.12	27.24
50375	Analysis	4.18	12.11	4.36	28.15
50610	Analysis	**3.74**	12.23	4.02	**26.85**
50656	Analysis	4.27	12.44	4.18	28.53
50669	Analysis	**3.84**	12.61	**3.90**	27.38
50697	Analysis	4.28	12.31	4.23	28.46
50709	Analysis	4.24	12.44	4.38	28.68
50920	Analysis	**3.94**	12.44	4.10	27.65
50992	Analysis	**3.91**	13.05	4.60	28.80
51047	Analysis	4.25	12.77	4.07	28.73
51057	Analysis	**3.91**	13.29	4.37	28.81
51134	Analysis	4.16	12.35	4.04	28.01
51232	Analysis	4.52	12.29	4.24	29.03
	Fidelity 5-15-5 Fertilizer Guarantee	5.00	15.00	5.00	34.00
50277	Analysis	5.36	15.26	**4.50**	34.60
50332	Analysis	5.40	16.04	**4.54**	35.59
50376	Analysis	5.28	16.02	**4.34**	35.06
	Fidelity 6-10-7 Fertilizer Guarantee	6.00	10.00	7.00	33.10
50272	Analysis	**5.89**	10.02	**6.75**	**32.59**
50294	Analysis	**5.71**	10.40	7.81	33.73
50362	Analysis	**5.97**	10.24	7.19	33.50
50708	Analysis	6.29	10.26	7.27	34.39
50993	Analysis	6.35	10.22	7.52	34.75
51050	Analysis	6.10	10.86	**6.41**	33.64
	Fidelity 6-12-6 Fertilizer Guarantee	6.00	12.00	6.00	34.20
50268	Analysis	6.07	13.01	6.64	36.18
50276	Analysis	6.21	12.14	7.17	36.14
50287	Analysis	6.14	12.04	7.85	36.62
50331	Analysis	6.68	**11.39**	7.01	36.27
50576	Analysis	6.52	**11.18**	7.42	36.11
50658	Analysis	6.10	12.36	6.39	35.27
51135	Analysis	6.22	12.26	6.19	35.23

Table 7. Analysis of commercial fertilizer, season 1935-36—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	Fidelity Chemical Corporation, Houston, Texas —Continued.				
	Fidelity 10-20-10 Fertilizer Guarantee	10.00	20.00	10.00	57.00
50283	Analysis	**9.14**	**18.26**	13.63	57.04
50293	Analysis	**9.49**	21.56	10.88	58.47
	Fidelity 11-48-0 Fertilizer Guarantee	11.00	48.00	.....	79.20
50311	Analysis	11.74	**46.19**	.....	**78.99**
51039	Analysis	12.48	**47.09**	.....	81.75
	Fidelity 16-20-0 Fertilizer Guarantee	16.00	20.00	.....	60.40
50319	Analysis	16.45	21.04	.....	62.62
51040	Analysis	**15.21**	**19.86**	.....	**58.35**
	Fidelity 20% Kainit Guarantee	.....	.....	20.00	22.00
50707	Analysis	.....	.....	21.40	23.54
	Fidelity Muriate of Potash Guarantee	.....	.....	50.00	55.00
50321	Analysis	.....	.....	**48.56**	**53.42**
	Fidelity Nitrate of Soda 15% Guarantee	15.00	.....	.....	36.00
50300	Analysis	15.73	.....	.....	37.75
	Fidelity 18% Superphosphate Guarantee	.....	18.00	.....	19.80
50328	Analysis	.....	19.26	.....	21.19
50674	Analysis	.....	18.70	.....	20.57
50698	Analysis	.....	18.43	.....	20.27
51046	Analysis	.....	18.13	.....	19.94
	Fidelity 20% Superphosphate Guarantee	.....	20.00	.....	22.00
50288	Analysis	.....	20.38	.....	22.42
50315	Analysis	.....	20.67	.....	22.74
50701	Analysis	.....	20.37	.....	22.41
51051	Analysis	.....	20.26	.....	22.29
	Fidelity Sulphate of Ammonia Guarantee	20.00	.....	.....	48.00
50320	Analysis	20.62	.....	.....	49.49
50348	Analysis	20.84	.....	.....	50.02
51038	Analysis	20.88	.....	.....	50.11
	Ford Motor Company, Dearborn, Michigan				
	Ford Ammonium Sulphate Guarantee	20.80	.....	.....	49.92
50306	Analysis	21.10	.....	.....	50.64
50349	Analysis	20.96	.....	.....	50.30
50433	Analysis	**20.60**	.....	.....	**49.44**
	Gilmer Cotton Oil & Fertilizer Company, Gilmer, Texas				
	G. C. O. & F. Co's 6-10-7 Guarantee	6.00	10.00	7.00	33.10
50500	Analysis	**2.88**	**7.96**	**4.02**	**20.09**
	G. C. O. & F. Co's Cotton Grower 4-8-4 Guarantee	4.00	8.00	4.00	22.80
50493	Analysis	**3.73**	**6.51**	**3.10**	**19.52**
50499	Analysis	**3.64**	**7.58**	**3.79**	**21.25**
50501	Analysis	**3.69**	7.22	**3.73**	**20.90**
51173	Analysis	4.53	8.40	**2.14**	**22.46**
51270	Analysis	5.23	9.48	4.41	27.83
	G. C. O. & F. Co's Special Cotton Grower Guarantee	6.00	12.00	6.00	34.20
51175	Analysis	**5.63**	12.30	7.74	35.55
	G. C. O. & F. Co's Superior Meal Compound Guarantee	3.00	10.00	3.00	21.50
50815	Analysis	**2.82**	11.10	3.29	22.59
51174	Analysis	**2.91**	10.05	3.57	21.97
51269	Analysis	**2.76**	**8.89**	3.31	**20.04**
	G. C. O. & F. Co's 20% Superphosphate Guarantee	.....	20.00	.....	22.00
50816	Analysis	.....	**19.27**	.....	**21.20**
	G. C. O. & F. Co's Tomato Special Guarantee	4.00	8.00	6.00	25.00
50498	Analysis	**3.75**	**7.68**	6.45	**24.55**
50814	Analysis	4.07	8.60	**5.79**	25.60
	Houston Packing Company, Houston, Texas				
	Houston's B. & B. Fertilizer Guarantee	4.70	*15.50	.....	22.44
50685	Analysis	4.87	*18.68	.....	25.14
	Houston's High Grade 4-8-6 Fertilizer Guarantee	4.00	8.00	6.00	25.00
50686	Analysis	5.14	11.60	6.35	32.09
	City of Houston Engineering Department, Houston, Tex.				
	Hu-Actinite 5.5-2.0-0 Guarantee	5.50	2.00	.....	15.40
50341	Analysis	**4.96**	2.68	.....	**14.85**

*Total phosphoric acid.

Table 7. Analysis of commercial fertilizer, season 1935-36—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found per ton
	International Agricultural Corporation, Texarkana, Arkansas-Texas				
	International 3-10-3 Fertilizer Guarantee	3.00	10.00	3.00	21.50
50607	Analysis	3.07	10.53	3.15	22.43
50729	Analysis	3.18	10.61	3.38	23.02
50765	Analysis	3.08	10.30	3.31	22.36
51074	Analysis	3.14	**9.87**	3.28	22.01
	International 4-8-4 Fertilizer Guarantee	4.00	8.00	4.00	22.80
50559	Analysis	4.08	8.18	4.08	23.28
50791	Analysis	4.03	8.53	4.29	23.77
51075	Analysis	**3.95**	8.41	4.04	23.17
51106	Analysis	**3.95**	8.23	4.29	23.25
51160	Analysis	4.08	8.79	4.14	24.01
51187	Analysis	4.04	8.05	4.04	23.00
51231	Analysis	**3.93**	8.21	4.01	22.87
51246	Analysis	4.05	8.53	4.17	23.69
	International 4-8-6 Truck Fertilizer Guarantee	4.00	8.00	6.00	25.00
50374	Analysis	4.16	**7.94**	6.15	25.48
50507	Analysis	4.04	8.46	6.02	25.63
50536	Analysis	4.10	8.49	6.05	25.84
50541	Analysis	4.07	8.75	6.05	26.06
50553	Analysis	4.10	8.39	**5.92**	25.58
50792	Analysis	4.04	8.59	6.01	25.76
50820	Analysis	4.07	8.17	6.04	25.40
50850	Analysis	4.01	8.23	6.27	25.57
50861	Analysis	4.03	8.38	6.14	25.64
50913	Analysis	4.09	8.17	6.03	25.44
	International 4-8-10 Potato Fertilizer Guarantee	4.00	8.00	10.00	29.40
50546	Analysis	4.02	8.10	10.18	29.76
	International 4-10-7 Tomato Fertilizer Guarantee	4.00	10.00	7.00	28.30
50948	Analysis	4.25	10.03	7.51	29.49
	International 4-12-4 Fertilizer Guarantee	4.00	12.00	4.00	27.20
50398	Analysis	4.06	**11.13**	4.56	**27.00**
50508	Analysis	4.04	**11.80**	4.25	27.36
50547	Analysis	4.03	**11.54**	4.19	**26.97**
50849	Analysis	4.11	**11.64**	4.39	27.49
50858	Analysis	4.17	12.42	4.17	28.26
50863	Analysis	4.16	12.05	4.24	27.90
51186	Analysis	4.17	12.08	4.03	27.73
51245	Analysis	4.11	**11.27**	4.10	**26.77**
	International 6-10-7 Fertilizer Guarantee	6.00	10.00	7.00	33.10
50373	Analysis	**5.95**	10.00	7.40	33.42
51105	Analysis	**5.82**	**9.89**	7.29	32.87
51120	Analysis	**5.86**	10.22	7.34	33.37
51235	Analysis	**5.71**	10.01	**6.74**	**32.12**
	International 6-12-6 Fertilizer Guarantee	6.00	12.00	6.00	34.20
50399	Analysis	6.01	12.01	6.10	34.34
	International Rainbow Cotton Fertilizer Guarantee	4.00	12.00	4.00	27.20
51182	Analysis	4.04	**11.28**	4.14	**26.66**
51205	Analysis	4.06	12.19	4.24	27.81
	International 18% Superphosphate Guarantee	.....	18.00	.....	19.80
50534	Analysis	.....	18.48	.....	20.33
50542	Analysis	.....	18.83	.....	20.71
50728	Analysis	.....	18.45	.....	20.30
50912	Analysis	.....	19.06	.....	20.97
	International 20% Superphosphate Guarantee	.....	20.00	.....	22.00
50862	Analysis	.....	21.33	.....	23.46
	Sulphate of Ammonia Guarantee	20.00	.....	.....	48.00
50309	Analysis	21.11	.....	.....	50.66
51151	Analysis	20.93	.....	.....	50.23
	Jacksonville Fertilizer Company, Jacksonville, Texas				
	Red Tomato, 4-8-4 Fertilizer Guarantee	4.00	8.00	4.00	22.80
50412	Analysis	4.26	9.72	5.19	26.62
50938	Analysis	4.45	8.42	4.56	24.96
51108	Analysis	4.20	8.06	4.83	24.26

Table 7. Analysis of commercial fertilizer, season 1935-36—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	Jacksonville Fertilizer Company, Jacksonville, Texas, —Continued.				
	Red Tomato, 4-8-6 Fertilizer Guarantee	4.00	8.00	6.00	25.00
50403	Analysis	4.18	9.31	**5.68**	26.52
	Red Tomato, 4-10-0 Fertilizer Guarantee	4.00	10.00	.....	20.60
50404	Analysis	4.64	11.74	.....	24.05
	Red Tomato, 4-12-4 Fertilizer Guarantee	4.00	12.00	4.00	27.20
50402	Analysis	4.89	12.63	4.88	31.00
50413	Analysis	4.52	12.80	4.32	29.68
50420	Analysis	4.80	12.82	4.78	30.88
50939	Analysis	4.16	12.35	5.81	29.96
	Red Tomato, 6-10-7 Fertilizer Guarantee	6.00	10.00	7.00	33.10
50414	Analysis	6.47	10.94	7.04	35.30
51111	Analysis	**5.52**	**9.92**	7.55	**32.47**
	Red Tomato, 6-12-6 Fertilizer Guarantee	6.00	12.00	6.00	34.20
50747	Analysis	6.46	12.14	6.28	35.76
	Red Tomato 16% Nitrate of Soda Guarantee	16.00	.....	.....	38.40
51110	Analysis	16.80	.....	.....	40.32
	Red Tomato 20% Sulphate of Ammonia Guarantee	20.00	.....	.....	48.00
50746	Analysis	20.76	.....	.....	49.82
	Kelly, Weber & Company, Inc., Lake Charles, La.				
	Weber-King Brand Fertilizer Special No. 0124 Guarantee	.....	12.00	4.00	17.60
51020	Analysis	.....	12.22	4.25	18.12
	Weber-King Brand Special No. 3103 Guarantee	3.00	10.00	3.00	21.50
51019	Analysis	**2.81**	**9.79**	3.37	**21.22**
	Weber-King Brand Fertilizer Special No. 484 Guarantee	4.00	8.00	4.00	22.80
50666	Analysis	4.05	8.05	4.54	23.57
51001	Analysis	**3.64**	**7.84**	4.39	**22.19**
51006	Analysis	4.06	8.06	9.14	28.66
51017	Analysis	4.09	8.25	**3.88**	23.17
	Weber-King Brand Fertilizer Special No. 4100 Guarantee	4.00	10.00	.....	20.60
51002	Analysis	4.41	**9.31**	.....	20.82
51022	Analysis	4.49	**9.55**	.....	21.29
51026	Analysis	4.48	**9.10**	.....	20.76
	Weber-King Brand Fertilizer Special No. 4124 Guarantee	4.00	12.00	4.00	27.20
50668	Analysis	**3.95**	**11.79**	4.45	27.35
50680	Analysis	**3.94**	**11.63**	4.84	27.57
51027	Analysis	**3.87**	**11.69**	4.61	27.22
	Weber-King Brand Fertilizer Special No. 6126 Guarantee	6.00	12.00	6.00	34.20
50667	Analysis	**5.60**	13.37	6.65	35.47
50679	Analysis	**5.63**	13.15	6.37	34.99
51018	Analysis	6.09	13.55	**.83**	**30.44**
	Weber-King Brand Raw Bone Meal Guarantee	3.70	*22.00	.....	24.72
51007	Analysis	4.26	*21.19	.....	25.48
	Sulphate of Ammonia Guarantee	20.00	.....	.....	48.00
51003	Analysis	20.66	.....	.....	49.58
	La-Tex Fertilizer Company, Shreveport, La.				
	La-Tex 4-8-6 Fertilizer Guarantee	4.00	8.00	6.00	25.00
50940	Analysis	4.56	8.93	**5.33**	26.62
	La-Tex 4-12-4 Fertilizer Guarantee	4.00	12.00	4.00	27.20
50969	Analysis	**3.59**	12.32	4.24	**26.83**
	Lockey Gin Service, Winnsboro, Texas				
	Lockey's Melo Fertilizer 4-8-4 Guarantee	4.00	8.00	4.00	22.80
50512	Analysis	4.33	8.50	4.02	24.16
	Lockey's Melo Fertilizer 4-8-6 Guarantee	4.00	8.00	6.00	25.00
50511	Analysis	4.11	8.56	6.08	25.97
50828	Analysis	**3.72**	8.81	**5.83**	25.03
	Lockey's Melo Fertilizer 4-12-4 Guarantee	4.00	12.00	4.00	27.20
50829	Analysis	4.26	12.29	4.62	29.69
	Lockey's 18% Superphosphate Guarantee	.....	18.00	.....	19.80
50830	Analysis	.....	18.35	.....	20.19

*Total phosphoric acid

Table 7. Analysis of commercial fertilizer, season 1935-36—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	Longview Cotton Oil Company, Longview, Texas				
	Longview Cotton and Corn Special Guarantee	4.00	12.00	4.00	27.20
50486	Analysis	**2.92**	12.18	4.52	**25.38**
50798	Analysis	4.81	12.34	4.21	29.74
51167	Analysis	4.41	12.92	4.04	29.23
51266	Analysis	**3.89**	12.59	4.33	27.95
	Longview Gregg County Special Guarantee	4.00	8.00	4.00	22.80
51166	Analysis	4.09	8.95	4.03	24.10
51265	Analysis	4.07	8.66	**3.81**	23.49
	Longview Prize Fertilizer Guarantee	6.00	12.00	6.00	34.20
50485	Analysis	**5.38**	12.05	6.29	**33.09**
50800	Analysis	**5.53**	12.50	6.21	**33.85**
	Longview Truck Special Guarantee	4.00	8.00	6.00	25.00
50484	Analysis	**3.21**	**6.69**	6.92	**22.67**
50799	Analysis	**3.64**	7.82	6.19	**24.15**
50803	Analysis	4.19	8.60	6.19	26.33
	Longview Best Superphosphate Guarantee	.....	20.00	.....	22.00
50487	Analysis	.....	20.90	.....	22.99
	Marshall Cotton Oil Company, Marshall, Texas				
	Marshall Eclipse Fertilizer 3-10-3 Guarantee	3.00	10.00	3.00	21.50
50795	Analysis	3.11	10.17	3.06	22.02
50879	Analysis	3.22	10.14	3.03	22.21
50895	Analysis	3.10	10.27	3.30	22.37
50917	Analysis	3.25	10.16	3.11	22.40
	Marshall Garden Fertilizer 4-8-6 Guarantee	4.00	8.00	6.00	25.00
50567	Analysis	4.03	8.34	**5.61**	25.01
50894	Analysis	4.24	8.29	**5.34**	25.17
	Marshall Fertilizer 6-12-6 Guarantee	6.00	12.00	6.00	34.20
50482	Analysis	**5.92**	**11.01**	**4.92**	**31.73**
50933	Analysis	6.02	12.45	**5.60**	34.31
	Marshall Nut Producer 6-9-3 Guarantee	6.00	9.00	3.00	27.60
50483	Analysis	**5.67**	9.30	3.27	**27.44**
50796	Analysis	6.20	9.04	3.04	28.16
	Marshall Superphosphate Guarantee	.....	18.00	.....	19.80
50935	Analysis	.....	19.10	.....	21.01
	Marshall Wonder Fertilizer 4-12-4 Guarantee	4.00	12.00	4.00	27.20
50918	Analysis	4.02	12.19	**3.84**	27.28
50934	Analysis	4.19	12.26	4.01	27.96
	Trucker's Delight 4-8-4 Guarantee	4.00	8.00	4.00	22.80
50578	Analysis	4.06	8.21	**3.78**	22.93
50797	Analysis	4.28	8.25	**3.56**	23.27
50878	Analysis	4.18	8.29	**3.45**	22.95
50916	Analysis	4.06	8.14	**3.72**	**22.78**
50953	Analysis	4.04	8.25	**3.62**	**22.76**
	Mixson Brothers, Kirbyville, Texas				
	Jasco Brand Special No. 3103 Guarantee	3.00	10.00	3.00	21.50
50640	Analysis	3.96	**9.50**	3.80	24.13
50987	Analysis	**2.68**	**9.48**	3.12	**20.29**
	Jasco Brand Special No. 484 Guarantee	4.00	8.00	4.00	22.80
50638	Analysis	**3.77**	9.20	4.28	23.88
50784	Analysis	4.03	**7.98**	**3.64**	**22.45**
50984	Analysis	4.08	**7.96**	**3.82**	**22.75**
	Jasco Brand Special No. 4107 Guarantee	4.00	10.00	7.00	28.30
50639	Analysis	4.22	10.50	7.86	30.33
50785	Analysis	4.35	**9.91**	8.10	30.25
50985	Analysis	4.63	**9.65**	8.00	30.53
	Jasco Brand Special No. 4124 Guarantee	4.00	12.00	4.00	27.20
50637	Analysis	4.17	12.51	4.76	29.01
50642	Analysis	**3.71**	12.66	4.50	27.78
50783	Analysis	**3.89**	12.58	4.34	27.95
50986	Analysis	4.09	**11.56**	4.46	27.45
50996	Analysis	**3.92**	**11.06**	4.53	**26.56**

Table 7. Analysis of commercial fertilizer, season 1935-36—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	New Jersey Fertilizer Company, 375 Tonnell Avenue, Jersey City, N. J.				
	N. J. Brand Bone Fertilizer Guarantee	2.47	*24.00	.....	23.21
50358	Analysis	2.54	*24.29	.....	23.59
	Oil Mill & Fertilizer Works, Henderson, Texas				
	Wolf Brand Fertilizer 4-8-4 Guarantee	4.00	8.00	4.00	22.80
50568	Analysis	4.03	9.02	4.12	24.12
50760	Analysis	**3.46**	8.02	5.71	23.40
50761	Analysis	**3.25**	8.14	5.13	22.39
50936	Analysis	**3.94**	9.99	4.25	25.13
51145	Analysis	**3.53**	10.09	4.14	24.12
	Wolf Brand Fertilizer 4-8-6 Guarantee	4.00	8.00	6.00	25.00
50763	Analysis	**3.97**	8.82	6.45	26.33
50937	Analysis	**3.69**	8.28	6.14	**24.72**
	Wolf Brand Fertilizer 4-10-0 Guarantee	4.00	10.00	.....	20.60
50469	Analysis	4.06	11.20	.....	22.06
	Wolf Brand Fertilizer 4-12-4 Guarantee	4.00	12.00	4.00	27.20
50468	Analysis	**3.40**	12.35	4.14	**26.30**
50762	Analysis	**3.92**	12.18	4.29	27.53
	Wolf Brand Fertilizer 6-10-7 Guarantee	6.00	10.00	7.00	33.10
50466	Analysis	6.51	10.32	7.05	34.73
	Wolf Brand Muriate of Potash Guarantee	.....	.....	50.00	55.00
51147	Analysis	.....	.....	57.68	63.45
	Wolf Brand Sulphate of Ammonia Guarantee	20.00	.....	.....	48.00
51146	Analysis	20.56	.....	.....	49.34
	Wolf Brand 18% Superphosphate Guarantee	.....	18.00	.....	19.80
50569	Analysis	.....	**17.44**	.....	**19.18**
	Wolf Brand Superphosphate 20% Guarantee	.....	20.00	.....	22.00
50467	Analysis	.....	20.05	.....	22.06
	Palestine Oil Mill & Fertilizer Works, Palestine, Texas				
	Palestine Blue Star 4-10-0 Fertilizer Guarantee	4.00	10.00	.....	20.60
50366	Analysis	4.04	11.16	.....	21.98
	Palestine Blue Star 4-12-4 Fertilizer Guarantee	4.00	12.00	4.00	27.20
50367	Analysis	4.00	**11.82**	4.54	27.59
50590	Analysis	**3.80**	**11.58**	5.66	28.09
50595	Analysis	4.02	**11.69**	5.05	28.07
50614	Analysis	**3.95**	**11.82**	4.39	27.31
50710	Analysis	4.02	**11.63**	4.36	27.24
50719	Analysis	4.08	**11.90**	4.20	27.50
50730	Analysis	4.02	12.25	4.23	27.78
50772	Analysis	4.15	12.68	4.27	28.61
51068	Analysis	4.14	12.26	5.15	29.10
51079	Analysis	4.17	12.38	4.25	28.31
51218	Analysis	4.10	12.47	4.50	28.51
51226	Analysis	4.04	**11.98**	4.16	27.46
51250	Analysis	4.00	12.61	4.31	28.21
51260	Analysis	4.11	12.45	**3.51**	27.42
	Palestine Blue Star 6-10-7 Fertilizer Guarantee	6.00	10.00	7.00	33.10
50596	Analysis	6.24	10.38	7.46	34.61
50620	Analysis	6.14	10.53	7.14	34.17
50773	Analysis	6.10	10.51	7.34	34.27
51056	Analysis	6.26	10.30	**6.72**	33.74
51164	Analysis	6.30	10.39	7.02	34.27
51225	Analysis	6.40	10.25	**6.77**	34.09
	Palestine Blue Star 6-12-6 Fertilizer Guarantee	6.00	12.00	6.00	34.20
50368	Analysis	**5.65**	12.11	6.55	**34.09**
50732	Analysis	**5.83**	**11.81**	6.53	**34.16**
51112	Analysis	**5.78**	12.07	6.08	**33.84**
	Palestine Blue Star Lawn Fertilizer Guarantee	5.00	10.00	.....	23.00
50391	Analysis	5.66	10.54	.....	25.17
51062	Analysis	5.48	10.66	.....	24.88
51228	Analysis	5.26	11.01	.....	24.73
	Palestine Blue Star 20% Manure Salts Guarantee	.....	.....	20.00	22.00
51141	Analysis	.....	.....	**18.77**	**20.65**

*Total phosphoric acid.

Table 7. Analysis of commercial fertilizer, season 1935-36—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	Palestine Oil Mill & Fertilizer Works, Palestine, Texas, —Continued.				
	Palestine Blue Star Muriate of Potash Guarantee	.....	.....	50.00	55.00
51066	Analysis	.....	.....	**49.94**	**54.93**
	Palestine Blue Star Sulphate of Ammonia Guarantee	20.00	.....	.....	48.00
51122	Analysis	20.95	.....	.....	50.28
	Palestine Cotton Producer Guarantee	3.00	10.00	3.00	21.50
50585	Analysis	3.87	10.54	3.42	24.64
50718	Analysis	3.11	**9.66**	4.07	22.57
51055	Analysis	3.02	10.75	3.11	22.50
51069	Analysis	3.01	10.20	3.26	22.03
51121	Analysis	3.06	**9.50**	3.29	**21.41**
	Palestine Perfection Guarantee	6.00	9.00	3.00	27.60
50369	Analysis	6.40	9.64	.44	**26.44**
	Palestine Rust Proof Guarantee	4.00	10.00	7.00	28.30
50370	Analysis	4.28	**9.18**	7.43	28.54
	Palestine 18% Superphosphate Guarantee	.....	18.00	.....	19.80
51132	Analysis	.....	18.77	.....	20.65
51152	Analysis	.....	18.91	.....	20.80
51244	Analysis	.....	20.31	.....	22.34
	Palestine 20% Superphosphate Guarantee	.....	20.00	.....	22.00
51129	Analysis	.....	20.81	.....	22.89
	Palestine Tomato Special Guarantee	4.00	8.00	6.00	25.00
50426	Analysis	**3.96**	7.38	5.52	**23.69**
50518	Analysis	4.00	**7.73**	**5.48**	**24.13**
50731	Analysis	4.04	**7.65**	6.09	**24.82**
50833	Analysis	4.08	8.21	**5.83**	25.23
51067	Analysis	**3.99**	**7.69**	6.41	25.09
51080	Analysis	4.34	**7.91**	**5.53**	25.20
	Palestine Upland Cotton Guarantee	4.00	8.00	4.00	22.80
50608	Analysis	4.00	**7.36**	4.50	**22.65**
50711	Analysis	**3.96**	**7.61**	4.36	**22.67**
50742	Analysis	**3.64**	7.62	4.43	**21.99**
51140	Analysis	**3.63**	8.04	4.65	**22.67**
51191	Analysis	4.10	**7.79**	4.06	22.88
51227	Analysis	4.16	8.28	**3.83**	23.30
51272	Analysis	4.06	8.45	4.02	23.46
	Pate Bros. Fertilizer Works, Sulphur Springs, Texas				
	Pate's 3-10-3 Guarantee	3.00	10.00	3.00	21.50
50842	Analysis	3.32	10.48	3.27	23.10
51274	Analysis	3.13	10.58	3.33	22.81
	Pate's 4-8-4 Guarantee	4.00	8.00	4.00	22.80
50811	Analysis	4.04	8.99	4.32	24.34
50841	Analysis	**3.90**	8.68	4.01	23.32
50876	Analysis	4.03	8.47	4.81	24.28
51172	Analysis	**3.86**	8.79	4.19	23.54
51275	Analysis	**3.63**	8.55	4.51	23.08
	Pate's 4-8-6 Guarantee	4.00	8.00	6.00	25.00
50513	Analysis	4.70	8.90	6.54	28.26
50524	Analysis	**3.96**	8.80	**5.65**	25.40
50535	Analysis	4.11	8.30	6.07	25.67
50812	Analysis	**3.95**	9.01	6.01	26.00
	Pate's 4-8-10 Guarantee	4.00	8.00	10.00	29.40
50527	Analysis	4.37	8.68	**9.50**	30.49
	Pate's 4-12-4 Guarantee	4.00	12.00	4.00	27.20
50432	Analysis	4.32	12.17	4.12	28.29
50525	Analysis	4.44	**11.87**	4.17	28.31
50839	Analysis	4.28	12.47	4.71	29.17
51268	Analysis	4.14	12.57	4.72	28.96
	Pate's 6-9-3 Guarantee	6.00	9.00	3.00	27.60
50840	Analysis	6.08	9.51	3.14	28.50
	Pate's Meal Mixture, Guarantee	3.00	10.00	.....	18.20
50521	Analysis	3.16	10.59	.....	19.23
50526	Analysis	3.02	10.92	.....	19.26

Table 7. Analysis of commercial fertilizer, season 1935-36—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	Pittsburg Cotton Oil Company, Pittsburg, Texas				
	Double Circle Fertilizer 3-10-3 Guarantee	3.00	10.00	3.00	21.50
50503	Analysis	**2.89**	**9.63**	3.01	**20.84**
50819	Analysis	3.04	10.09	3.18	21.90
50874	Analysis	3.08	**9.95**	3.03	21.67
50905	Analysis	**2.97**	**9.86**	**2.82**	**21.08**
51177	Analysis	3.07	10.34	3.13	22.18
	Double Circle Fertilizer No. 4-8-4 Guarantee	4.00	8.00	4.00	22.80
50818	Analysis	4.32	8.21	4.04	23.84
50868	Analysis	4.30	8.30	4.05	23.91
50906	Analysis	4.21	8.81	**3.91**	24.09
	Double Circle Fertilizer No. 4-8-6 Guarantee	4.00	8.00	6.00	25.00
50515	Analysis	**3.94**	**7.77**	6.20	**24.83**
50533	Analysis	**3.97**	**7.46**	6.01	**24.35**
50823	Analysis	4.08	**7.56**	6.16	**24.89**
50875	Analysis	**3.86**	**7.68**	6.10	**24.42**
50892	Analysis	4.02	**7.81**	6.89	25.13
51181	Analysis	4.09	8.00	**5.72**	**24.91**
	Double Circle Fertilizer No. 4-8-10 Guarantee	4.00	8.00	10.00	29.40
50504	Analysis	4.08	8.00	**9.11**	**28.61**
	Double Circle Fertilizer No. 4-12-4 Guarantee	4.00	12.00	4.00	27.20
50505	Analysis	4.04	**11.52**	4.10	**26.88**
51178	Analysis	**3.81**	**9.83**	4.83	**25.26**
	Double Circle Fertilizer No. 6-10-7 Guarantee	6.00	10.00	7.00	33.10
50447	Analysis	6.43	**9.62**	7.15	33.88
50824	Analysis	6.35	10.20	**6.79**	33.93
	Double Circle Fertilizer No. 6-12-6 Guarantee	6.00	12.00	6.00	34.20
50502	Analysis	6.14	**11.91**	6.21	34.67
50817	Analysis	6.03	12.06	6.73	35.14
	Eighteen Per Cent Superphosphate Guarantee	.....	18.00	.....	19.80
50873	Analysis	.....	20.53	.....	22.58
50907	Analysis	.....	19.49	.....	21.44
	Robert Nicholson Seed Company, Dallas, Texas				
	Nicholson's All-Round Fertilizer Guarantee	4.00	12.00	4.00	27.20
50431	Analysis	4.58	**11.50**	4.08	28.13
50846	Analysis	4.38	12.56	4.75	29.56
	Nicholson's Evergreen Lawn Dressing Guarantee	10.00	6.00	4.00	35.00
50430	Analysis	**9.86**	6.36	**3.81**	**34.85**
50845	Analysis	10.65	7.23	4.18	38.11
	Thos. Self, Crockett, Texas				
	Crockett 4-8-4 Fertilizer Guarantee	4.00	8.00	4.00	22.80
50723	Analysis	**3.70**	**7.83**	4.30	**22.22**
51065	Analysis	**3.68**	8.02	4.06	**22.12**
	Crockett 4-8-6 Fertilizer Guarantee	4.00	8.00	6.00	25.00
50722	Analysis	**3.89**	8.81	8.10	27.94
	Crockett 4-12-4 Fertilizer Guarantee	4.00	12.00	4.00	27.20
50726	Analysis	4.06	12.07	4.54	28.01
51064	Analysis	**3.58**	**11.03**	5.40	**26.66**
51243	Analysis	4.16	**11.93**	**3.70**	**27.17**
	Crockett 6-10-7 Fertilizer Guarantee	6.00	10.00	7.00	33.10
50725	Analysis	**5.55**	10.76	8.05	34.02
	Crockett Sulphate of Ammonia Guarantee	20.00	.....	.....	48.00
50727	Analysis	20.97	.....	.....	50.33
	Crockett 18% Superphosphate Guarantee	.....	18.00	.....	19.80
50724	Analysis	.....	**16.96**	.....	**18.66**
	Crockett 20% Superphosphate Guarantee	.....	20.00	.....	22.00
50361	Analysis	.....	20.32	.....	22.35
	Shreveport Fertilizer Works, Shreveport, La.				
	Lion 4-8-4 Fertilizer Guarantee	4.00	8.00	4.00	22.80
50564	Analysis	4.11	8.44	**3.79**	23.31
50882	Analysis	**3.32**	9.05	**3.75**	**22.06**
50886	Analysis	**3.58**	8.81	**3.54**	**22.17**
50910	Analysis	4.44	8.02	4.24	24.14
50989	Analysis	4.09	8.25	**3.71**	22.98

Table 7. Analysis of commercial fertilizer, season 1935-36—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	Shreveport Fertilizer Works, Shreveport, La.—Continued				
	Lion 4-8-4 Fertilizer—Continued—Guarantee	4.00	8.00	4.00	22.80
51100	Analysis	**3.55**	8.70	4.14	**22.64**
51115	Analysis	4.04	8.21	**3.95**	23.08
51252	Analysis	**3.81**	**7.71**	4.21	22.25
	Lion 6-9-3 Prolific Fruiter Guarantee	6.00	9.00	3.00	27.60
50930	Analysis	**5.65**	9.16	3.11	**27.06**
	Lion 6-10-7 Fertilizer Guarantee	6.00	10.00	7.00	33.10
51116	Analysis	6.85	10.35	**6.65**	35.15
	Lion 10-0-10 Fertilizer Guarantee	10.00	.....	10.00	35.00
50748	Analysis	10.14	.....	**9.58**	**34.88**
51238	Analysis	**9.38**	.....	10.22	**33.75**
	Lion Gold Coin Guano Guarantee	6.00	12.00	6.00	34.20
50947	Analysis	**5.86**	12.54	6.33	34.81
	Lion Meal Formula Guarantee	3.00	10.00	3.00	21.50
50544	Analysis	3.57	10.57	3.51	24.06
50558	Analysis	**2.91**	10.03	3.28	21.62
50665	Analysis	**2.48**	10.09	3.85	**21.29**
50822	Analysis	**2.84**	10.46	3.03	21.66
50855	Analysis	3.01	10.45	**2.75**	21.75
50864	Analysis	**2.84**	10.07	3.03	**21.23**
50869	Analysis	3.14	10.10	3.17	22.14
	Lion Special Truck Guarantee	4.00	8.00	6.00	25.00
50452	Analysis	**3.78**	8.66	**5.90**	25.09
50865	Analysis	**3.54**	8.13	6.16	**24.22**
51099	Analysis	4.06	8.21	6.04	25.41
51239	Analysis	**3.65**	8.01	**5.69**	**23.83**
51278	Analysis	4.00	8.54	**5.69**	25.25
51280	Analysis	4.07	**7.92**	5.70	**24.75**
	Lion Superior Cotton Grower Guarantee	4.00	12.00	4.00	27.20
50557	Analysis	**3.38**	12.17	4.21	**26.13**
50580	Analysis	4.02	12.07	**3.70**	**27.00**
50619	Analysis	**3.56**	12.23	4.22	**26.63**
50883	Analysis	**3.82**	**11.91**	4.36	**27.07**
50922	Analysis	**3.89**	12.68	**3.70**	27.36
50968	Analysis	**3.11**	12.71	**3.71**	**25.52**
50988	Analysis	4.08	**11.84**	4.02	27.23
51088	Analysis	4.04	**11.41**	4.27	**26.95**
	Lion 18% Superphosphate Guarantee	.....	18.00	.....	19.80
50556	Analysis	.....	18.33	.....	20.16
50923	Analysis	.....	18.90	.....	20.79
	Lion Sweet Potato Special Guarantee	4.00	10.00	7.00	28.30
50821	Analysis	**3.75**	10.26	**6.63**	**27.58**
	Longhorn 3-10-3 Fertilizer Guarantee	3.00	10.00	3.00	21.50
50630	Analysis	**2.34**	10.49	3.23	**20.71**
50961	Analysis	3.28	10.00	**2.63**	21.76
50971	Analysis	3.19	**9.83**	3.05	21.83
50975	Analysis	3.15	10.17	3.27	22.35
	Longhorn 4-8-4 Fertilizer Guarantee	4.00	8.00	4.00	22.80
50379	Analysis	4.02	8.49	4.04	23.43
50706	Analysis	**3.39**	8.54	4.07	**22.01**
50867	Analysis	**3.86**	8.67	4.04	23.24
50976	Analysis	4.07	8.08	4.16	23.24
51078	Analysis	**3.90**	8.35	**3.66**	22.58
	Longhorn 4-8-6 Fertilizer Guarantee	4.00	8.00	6.00	25.00
50425	Analysis	**3.63**	9.07	**2.70**	**21.66**
	Longhorn 4-12-4 Fertilizer Guarantee	4.00	12.00	4.00	27.20
50570	Analysis	4.28	12.32	**3.46**	27.63
50926	Analysis	**3.89**	12.14	4.27	27.39
50972	Analysis	4.13	12.35	**3.98**	27.88
	Longhorn 6-10-7 Fertilizer Guarantee	6.00	10.00	7.00	33.10
50380	Analysis	**5.30**	10.66	7.52	**32.72**
50583	Analysis	**5.57**	10.74	**6.47**	**32.30**
50606	Analysis	**5.41**	10.15	7.05	**31.91**
50618	Analysis	**4.99**	11.50	7.11	**32.45**
51130	Analysis	6.43	10.98	**6.52**	34.68

Table 7. Analysis of commercial fertilizer, season 1935-36—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found per ton
	Shreveport Fertilizer Works, Shreveport, La.—Continued				
	Longhorn 6-12-6 Fertilizer Guarantee	6.00	12.00	6.00	34.20
50631	Analysis	**5.90**	12.90	6.24	35.21
50705	Analysis	**5.88**	12.33	6.31	34.61
	Longhorn 18% Superphosphate Guarantee	.....	18.00	.....	19.80
50914	Analysis	.....	19.55	.....	21.51
50927	Analysis	.....	18.30	.....	20.13
	Longhorn 20% Superphosphate Guarantee	.....	20.00	.....	22.00
50974	Analysis	.....	**19.63**	.....	**21.59**
	Soil Builders, Inc., Orlando, Florida				
	Soft Phosphate with Colloidal Clay Guarantee	.....	*22.00	.....	5.72
50338	Analysis	.....	*27.34	.....	7.11
	Swift & Company Fertilizer Works, Harvey and Shreveport, La. and Houston, Texas				
	Muriate of Potash Guarantee	.....	.....	50.00	55.00
50832	Analysis	.....	.....	50.16	55.18
	16% Nitrate of Soda Guarantee	16.00	.....	.....	38.40
50292	Analysis	16.13	.....	.....	38.71
	Pioneer 4-8-4 Guarantee	4.00	8.00	4.00	22.80
50749	Analysis	**3.86**	8.00	**3.71**	**22.14**
	Pioneer 4-8-6 Guarantee	4.00	8.00	6.00	25.00
50877	Analysis	4.12	8.35	6.06	25.75
51086	Analysis	4.15	8.12	6.18	25.69
	Pioneer 4-12-4 Guarantee	4.00	12.00	4.00	27.20
51087	Analysis	4.08	12.04	4.11	27.55
	Pioneer 5-15-5 Guarantee	5.00	15.00	5.00	34.00
50284	Analysis	5.34	**14.27**	5.26	34.31
	Pioneer 6-12-6 Guarantee	6.00	12.00	6.00	34.20
51117	Analysis	6.17	12.09	6.09	34.81
	Raw Bone Meal Fertilizer Guarantee	3.70	*22.00	.....	24.72
50303	Analysis	**3.66**	***21.56**	.....	**24.30**
50435	Analysis	3.92	*22.49	.....	25.60
	Sulphate of Ammonia Guaran ee	20.00	.....	.....	48.00
50657	Analysis	20.10	.....	.....	48.24
	Swift's Red Steer 3-10-3 Guarantee	3.00	10.00	3.00	21.50
50352	Analysis	3.15	11.15	3.71	23.91
50554	Analysis	3.18	10.81	3.30	23.15
50663	Analysis	**2.97**	10.29	3.36	22.15
50956	Analysis	3.28	10.28	3.87	23.44
50978	Analysis	**2.89**	10.28	**2.80**	**21.33**
51125	Analysis	3.19	11.83	**2.78**	23.73
51180	Analysis	3.14	10.67	3.03	22.61
51215	Analysis	3.12	10.38	3.20	22.43
51233	Analysis	3.08	10.00	**2.85**	21.53
	Swift's Red Steer 4-8-4 Guarantee	4.00	8.00	4.00	22.80
50329	Analysis	4.08	8.48	4.10	23.63
50371	Analysis	4.28	8.64	**3.95**	24.12
50388	Analysis	4.06	8.49	4.00	23.48
50494	Analysis	**3.97**	8.40	4.31	23.51
50537	Analysis	4.12	9.03	4.62	24.90
50634	Analysis	**3.84**	8.33	**3.85**	**22.62**
50677	Analysis	4.16	8.38	4.19	23.81
50756	Analysis	4.06	8.48	4.08	23.56
50788	Analysis	4.07	8.35	4.10	23.47
50801	Analysis	4.01	8.39	4.54	23.84
50872	Analysis	**3.95**	8.17	4.26	23.16
50896	Analysis	4.04	8.23	4.08	23.24
50898	Analysis	4.24	8.75	4.25	24.49
51005	Analysis	4.06	8.44	**3.50**	22.87
51009	Analysis	4.44	9.13	4.16	25.28
51044	Analysis	4.02	8.42	**3.59**	22.86
51170	Analysis	**3.89**	8.20	4.05	22.82
51230	Analysis	4.00	8.05	**3.51**	**22.32**

*Total phosphoric acid.

Table 7. Analysis of commercial fertilizer, season 1935-36—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	Swift & Company Fertilizer Works, Harvey and Shreveport, La. and Houston, Texas—Continued.				
	Swift's Red Steer 4-8-6 Guarantee	4.00	8.00	6.00	25.00
50449	Analysis	4.09	8.11	6.01	25.35
50851	Analysis	4.11	8.44	6.06	25.81
51171	Analysis	4.10	8.72	6.01	26.04
	Swift's Red Steer 4-10-0 Guarantee	4.00	10.00	.....	20.60
50333	Analysis	4.24	**9.98**	.....	21.16
50453	Analysis	4.04	10.35	.....	21.09
	Swift's Red Steer 4-12-4 Guarantee	4.00	12.00	4.00	27.20
50290	Analysis	**3.97**	**11.91**	4.38	27.45
50516	Analysis	4.10	12.37	4.16	28.03
50624	Analysis	4.19	**11.92**	4.06	27.64
50641	Analysis	4.02	12.59	**3.60**	27.46
50650	Analysis	4.08	**11.83**	4.30	27.53
50652	Analysis	4.08	12.54	**3.87**	27.84
50678	Analysis	4.30	12.26	4.12	28.34
50764	Analysis	4.10	12.62	4.28	28.43
50781	Analysis	4.15	12.73	**3.67**	28.00
50789	Analysis	4.06	12.50	4.06	27.96
50805	Analysis	4.04	12.42	4.32	28.11
50825	Analysis	4.10	**11.68**	4.40	27.53
50977	Analysis	4.25	12.17	**3.47**	27.41
50990	Analysis	4.08	12.36	**3.58**	27.33
51010	Analysis	4.26	12.05	4.44	28.36
51015	Analysis	4.24	**11.68**	4.47	27.95
51032	Analysis	4.27	12.05	**3.58**	27.45
51049	Analysis	4.26	12.35	4.04	28.25
51061	Analysis	4.30	**11.85**	**3.52**	27.23
51083	Analysis	4.04	12.08	4.22	27.63
51131	Analysis	**3.94**	12.04	4.21	27.33
51179	Analysis	4.14	12.07	4.03	27.65
51202	Analysis	4.19	12.40	4.12	28.23
	Swift's Red Steer 4-10-7 Guarantee	4.00	10.00	7.00	28.30
50633	Analysis	4.18	10.75	**6.09**	28.56
	Swift's Red Steer 6-9-3 Guarantee	6.00	9.00	3.00	27.60
50263	Analysis	**5.96**	9.60	3.23	28.41
50387	Analysis	**5.97**	9.44	**2.89**	27.89
50733	Analysis	**5.81**	9.58	3.21	28.01
	Swift's Red Steer 6-10-7 Guarantee	6.00	10.00	7.00	33.10
50295	Analysis	6.04	10.42	7.22	33.90
50312	Analysis	6.28	**9.23**	7.26	33.21
50326	Analysis	6.10	10.00	7.20	33.56
50491	Analysis	6.05	10.65	7.00	33.94
51222	Analysis	6.08	10.19	7.04	33.54
	Swift's Red Steer 6-12-6 Guarantee	6.00	12.00	6.00	34.20
50259	Analysis	6.25	**11.88**	6.24	34.93
50264	Analysis	6.10	**11.45**	6.28	**34.15**
50265	Analysis	**5.72**	12.03	6.16	**33.74**
50267	Analysis	6.04	**11.66**	6.66	34.66
50278	Analysis	6.30	**11.51**	6.00	34.38
50289	Analysis	6.06	**11.65**	6.18	**34.16**
50334	Analysis	6.07	12.53	**5.88**	34.82
50662	Analysis	6.22	**11.58**	6.02	34.29
50675	Analysis	6.10	12.35	6.26	35.12
50734	Analysis	6.35	12.14	6.01	35.20
50946	Analysis	6.12	12.58	**5.72**	34.82
51014	Analysis	6.03	12.17	6.23	34.71
51073	Analysis	6.40	12.22	6.01	35.41
51101	Analysis	6.23	12.68	6.24	35.76
51104	Analysis	6.36	12.14	**5.99**	35.20
51161	Analysis	6.23	12.45	6.18	35.45
	Swift's Red Steer 8-24-8 Guarantee	8.00	24.00	8.00	54.40
50285	Analysis	**7.77**	**22.81**	8.89	**53.52**

Table 7. Analysis of commercial fertilizer, season 1935-36—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	Swift & Company Fertilizer Works, Harvey and Shreveport, La. and Houston, Texas—Continued.				
	Swift's Red Steer 10-20-10 Guarantee	10.00	20.00	10.00	57.00
50302	Analysis	**9.32**	**19.00**	10.12	**54.40**
50509	Analysis	10.48	**19.12**	**9.82**	**56.98**
	Swift's Red Steer 18% Superphosphate Guarantee	.....	18.00	.....	19.80
50651	Analysis	.....	18.55	.....	20.41
50676	Analysis	.....	18.55	.....	20.41
51008	Analysis	.....	19.31	.....	21.24
51016	Analysis	.....	18.63	.....	20.49
51162	Analysis	.....	19.02	.....	20.92
	Swift's Red Steer 20% Superphosphate Guarantee	.....	20.00	.....	22.00
50305	Analysis	.....	20.36	.....	22.40
50632	Analysis	.....	**19.71**	.....	**21.68**
50852	Analysis	.....	22.00	.....	24.20
	Swift's Red Steer Tomato Grower 4-8-6 Guarantee	4.00	8.00	6.00	25.00
50492	Analysis	4.00	**7.85**	6.30	25.17
50790	Analysis	4.04	8.09	6.07	25.28
50806	Analysis	4.04	8.28	6.11	25.53
50847	Analysis	4.18	8.20	6.17	25.84
50884	Analysis	4.00	8.26	6.12	25.42
50897	Analysis	4.16	8.52	6.24	26.21
50928	Analysis	4.10	8.23	6.16	25.67
51072	Analysis	**3.89**	8.40	**5.51**	**24.64**
51234	Analysis	4.08	8.13	6.12	25.46
	Swift's Red Steer Tomato Grower 6-10-7 Guarantee	6.00	10.00	7.00	33.10
50372	Analysis	6.00	**9.43**	7.08	**32.56**
50510	Analysis	6.08	10.35	7.11	33.80
50528	Analysis	6.16	10.36	7.29	34.20
50555	Analysis	6.21	10.04	7.21	33.87
50611	Analysis	6.10	10.30	7.11	33.79
50661	Analysis	6.19	10.46	7.02	34.09
50712	Analysis	6.26	10.77	**6.84**	34.39
50739	Analysis	6.21	10.60	7.26	**34.55**
50991	Analysis	6.53	10.51	**6.86**	34.78
51229	Analysis	6.29	10.51	7.04	34.40
	Vigoro Guarantee	4.00	12.00	4.00	27.20
50291	Analysis	4.30	12.27	4.40	28.66
50298	Analysis	4.33	13.41	4.28	30.29
50299	Analysis	4.30	12.56	4.54	29.13
50345	Analysis	4.28	12.14	4.42	28.48
50434	Analysis	4.15	12.14	4.23	27.96
51158	Analysis	4.39	**11.94**	4.64	28.77
51168	Analysis	4.24	12.49	4.36	28.72
51169	Analysis	4.14	12.70	4.18	28.51
	Temple Cotton Oil Company, North Little Rock, Ark.				
	Quapaw 3-10-3 Guarantee	3.00	10.00	3.00	21.50
50552	Analysis	3.37	**9.74**	3.41	22.56
	Quapaw 4-8-4 Guarantee	4.00	8.00	4.00	22.80
50550	Analysis	4.03	**7.91**	4.46	23.28
50909	Analysis	4.21	**7.68**	4.30	23.28
	Quapaw 4-8-6 Guarantee	4.00	8.00	6.00	25.00
50548	Analysis	4.08	**7.81**	6.51	25.54
50551	Analysis	4.31	**7.82**	6.14	25.69
50908	Analysis	4.18	**7.64**	6.24	25.53
	Quapaw 6-10-7 Guarantee	6.00	10.00	7.00	33.10
50549	Analysis	6.33	**9.77**	7.41	34.09
	Texas Chemical Company, 811 Petroleum Building, Houston, Texas				
	"T. C. C." Brand Raw Bone Meal Guarantee	3.70	*22.00	.....	24.72
50342	Analysis	4.33	***19.59**	.....	**24.49**
50672	Analysis	4.26	*22.46	.....	26.39
51000	Analysis	4.49	***20.95**	.....	25.86
51004	Analysis	4.67	***21.38**	.....	26.60
51021	Analysis	4.65	***21.02**	.....	26.29

*Total phosphoric acid.

Table 7. Analysis of commercial fertilizer, season 1935-36—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	Texas Chemical Company, 811 Petroleum Building, Houston, Texas—Continued.				
	"T. C. C." Brand Raw Bone Meal—Continued—Guarantee	3.70	*22.00	.....	24.72
51024	Analysis	4.36	*21.27	.....	25.77
51031	Analysis	4.50	*20.99	.....	25.91
	Texas Farm Products Company, Nacogdoches, Texas				
	Lone Star Brand 3-10-3 Fertilizer Guarantee	3.00	10.00	3.00	21.50
50954	Analysis	3.04	10.05	2.76	**21.40**
51143	Analysis	3.07	10.15	2.72	21.53
	Lone Star Brand 4-8-4 Fertilizer Guarantee	4.00	8.00	4.00	22.80
50359	Analysis	4.01	8.21	4.01	23.06
50382	Analysis	4.16	8.08	3.92	23.18
50390	Analysis	**3.89**	8.14	**3.89**	22.57
50586	Analysis	4.01	8.03	4.09	22.95
50602	Analysis	**3.96**	8.10	4.05	22.87
50924	Analysis	**3.83**	8.28	**3.79**	22.47
50960	Analysis	**3.85**	8.41	3.57	22.42
51102	Analysis	4.02	8.46	4.04	23.40
51127	Analysis	**3.87**	8.25	**3.87**	**22.63**
51144	Analysis	4.01	8.85	**3.19**	22.87
51240	Analysis	4.13	8.04	4.04	23.19
51249	Analysis	**3.96**	**7.93**	**3.83**	**22.43**
51255	Analysis	**3.67**	**7.97**	**3.59**	**21.53**
51261	Analysis	4.07	8.14	**3.75**	22.85
	Lone Star Brand 4-8-6 Fertilizer Guarantee	4.00	8.00	6.00	25.00
50584	Analysis	4.14	8.39	6.00	25.77
50601	Analysis	**3.96**	8.21	6.02	25.15
50902	Analysis	4.14	8.53	6.04	25.36
51159	Analysis	4.05	8.71	6.15	26.07
	Lone Star Brand 4-10-0 Fertilizer Guarantee	4.00	10.00	.....	20.60
50381	Analysis	4.01	10.01	.....	20.63
50394	Analysis	4.16	10.11	.....	21.10
50411	Analysis	4.17	10.72	.....	21.80
	Lone Star Brand 4-12-4 Fertilizer Guarantee	4.00	12.00	4.00	27.20
50383	Analysis	4.18	12.11	**3.90**	27.64
50417	Analysis	4.22	12.00	4.36	28.19
50589	Analysis	4.27	12.39	4.16	28.46
50591	Analysis	4.08	12.71	**3.64**	27.77
50594	Analysis	4.14	12.59	4.37	28.60
50612	Analysis	4.16	12.33	4.02	27.96
50616	Analysis	4.08	12.12	4.15	27.69
50625	Analysis	**3.92**	12.63	4.22	27.94
50713	Analysis	4.25	12.43	4.14	28.42
50774	Analysis	4.02	12.81	4.14	28.29
50925	Analysis	4.14	12.29	4.16	28.04
50952	Analysis	4.12	12.84	4.31	28.75
50959	Analysis	**3.91**	12.42	4.03	27.47
50962	Analysis	4.02	12.69	4.03	28.04
50965	Analysis	4.18	12.24	**3.95**	27.84
50970	Analysis	4.04	12.40	4.14	27.89
51128	Analysis	4.04	12.19	4.05	27.57
51236	Analysis	4.04	**11.99**	4.04	27.33
	Lone Star Brand 6-9-3 Fertilizer Guarantee	6.00	9.00	3.00	27.60
50777	Analysis	6.05	9.83	3.09	28.73
	Lone Star Brand 6-10-7 Fertilizer Guarantee	6.00	10.00	7.00	33.10
50384	Analysis	6.04	10.18	7.11	33.52
50389	Analysis	**5.57**	**9.57**	**6.30**	**30.83**
50392	Analysis	**5.86**	10.12	7.02	**32.91**
50460	Analysis	**5.88**	10.52	7.12	33.51
50587	Analysis	**5.86**	10.59	7.04	33.45
50609	Analysis	**5.95**	10.37	7.04	33.43
50613	Analysis	6.06	10.47	7.28	34.07
50714	Analysis	**5.91**	10.75	**6.89**	33.59
50745	Analysis	6.08	10.97	7.32	34.71
50771	Analysis	**5.99**	10.50	7.02	33.65
50901	Analysis	**5.96**	10.37	**6.76**	33.15

*Total phosphoric acid.

Table 7. Analysis of commercial fertilizer, season 1935-36—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	Texas Farm Products Company, Nacogdoches, Texas —Continued.				
	Lone Star Brand 6-10-7 Fertilizer—Continued—Guarantee	6.00	10.00	7.00	33.10
50957	Analysis	**5.74**	10.64	**6.58**	32.72
50958	Analysis	6.00	10.51	7.05	33.72
51237	Analysis	**5.92**	10.13	**6.62**	**32.63**
51256	Analysis	6.06	10.28	**6.81**	33.34
51258	Analysis	**5.88**	10.55	**6.89**	33.30
	Lone Star Brand 6-12-6 Fertilizer Guarantee	6.00	12.00	6.00	34.20
50393	Analysis	**5.94**	**11.72**	6.07	**33.83**
50531	Analysis	6.04	12.22	6.22	34.78
50579	Analysis	**5.96**	**11.55**	6.49	**34.15**
50603	Analysis	6.16	12.61	6.01	35.26
50949	Analysis	6.00	12.62	**5.87**	34.74
51107	Analysis	6.24	**11.87**	6.25	34.92
51163	Analysis	6.25	12.40	**5.84**	35.06
	Lone Star Brand 10-10-0 Fertilizer Guarantee	10.00	10.00	.....	35.00
50532	Analysis	**9.58**	10.50	.....	**34.54**
51123	Analysis	10.14	10.56	.....	35.96
51137	Analysis	10.22	10.57	.....	36.16
	Lone Star Brand 50% Muriate of Potash Guarantee	.....	.....	50.00	55.00
50778	Analysis	.....	.....	**48.65**	**53.52**
	Lone Star Brand Sulphate of Ammonia Guarantee	20.00	.....	.....	48.00
51124	Analysis	20.45	.....	.....	49.08
51136	Analysis	20.68	.....	.....	49.63
	Lone Star Brand 18% Superphosphate Guarantee	.....	18.00	.....	19.80
50951	Analysis	.....	18.82	.....	20.70
	Lone Star Brand 20% Superphosphate Guarantee	.....	20.00	.....	22.00
50955	Analysis	.....	20.52	.....	22.57
50963	Analysis	.....	21.26	.....	23.39
51257	Analysis	.....	21.42	.....	23.56
	Tri-State Fertilizer & Lumber Company, Shreveport, La.				
	Red Diamond 3-10-3 Fertilizer Guarantee	3.00	10.00	3.00	21.50
51263	Analysis	3.41	**9.86**	3.42	22.79
	Red Diamond 4-8-4 Fertilizer Guarantee	4.00	8.00	4.00	22.80
50397	Analysis	4.18	9.45	4.99	25.92
50415	Analysis	*4.56*	*10.06*	*7.63*	*30.40*
50950	Analysis	4.45	8.29	4.77	25.05
51251	Analysis	4.17	8.66	4.09	24.04
51253	Analysis	4.14	8.83	4.41	24.50
51259	Analysis	4.88	8.92	4.87	26.88
51262	Analysis	4.02	8.74	4.34	24.03
	Red Diamond 4-8-6 Fertilizer Guarantee	4.00	8.00	6.00	25.00
50416	Analysis	4.74	8.50	7.03	28.46
51103	Analysis	5.14	8.38	6.79	29.03
	Red Diamond 4-12-4 Fertilizer Guarantee	4.00	12.00	4.00	27.20
50396	Analysis	4.58	12.49	4.56	29.75
50418	Analysis	4.39	12.81	4.39	29.46
51254	Analysis	4.85	12.52	4.77	30.66
	Red Diamond 6-10-7 Fertilizer Guarantee	6.00	10.00	7.00	33.10
50395	Analysis	6.24	10.90	**6.72**	34.36
50571	Analysis	6.37	11.37	7.09	35.60
	Red Diamond 10-0-10 Fertilizer Guarantee	10.00	.....	10.00	35.00
51109	Analysis	10.78	.....	10.64	37.57
	Tyler Fertilizer Company, Tyler, Texas				
	Heart Brand Fertilizer No. 3-10-3 Guarantee	3.00	10.00	3.00	21.50
51208	Analysis	3.02	10.15	3.54	22.31
	Heart Brand Fertilizer No. 4-8-4 Guarantee	4.00	8.00	4.00	22.80
50445	Analysis	4.04	**7.98**	6.03	25.11
50740	Analysis	4.27	8.30	5.66	25.61
51203	Analysis	**3.72**	9.11	4.71	24.13
51207	Analysis	4.16	8.55	4.60	24.45
51267	Analysis	**3.77**	**7.57**	6.06	24.05

Table 7. Analysis of commercial fertilizer, season 1935-36—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	Tyler Fertilizer Company, Tyler, Texas—Continued.				
	Heart Brand Fertilizer No. 4-8-6 Guarantee	4.00	8.00	6.00	25.00
50424	Analysis	4.04	8.28	**5.80**	25.19
50831	Analysis	4.38	8.85	**4.65**	25.37
51077	Analysis	**3.91**	8.42	6.02	25.26
51096	Analysis	4.56	8.25	6.32	26.97
	Heart Brand Fertilizer No. 4-10-0 Guarantee	4.00	10.00	.....	20.60
50408	Analysis	**3.78**	**9.76**	.....	**19.81**
	Heart Brand Fertilizer No. 4-12-4 Guarantee	4.00	12.00	4.00	27.20
50446	Analysis	4.09	12.38	**3.62**	27.42
50751	Analysis	4.27	**11.84**	4.16	27.85
51097	Analysis	4.61	**11.21**	4.36	28.19
51219	Analysis	4.56	**11.38**	4.41	28.31
	Heart Brand Fertilizer No. 6-9-3 Guarantee	6.00	9.00	3.00	27.60
50752	Analysis	**5.56**	10.06	3.30	28.04
51176	Analysis	**5.60**	9.24	3.14	**27.05**
	Heart Brand Fertilizer No. 6-10-7 Guarantee	6.00	10.00	7.00	33.10
50409	Analysis	**5.67**	10.19	7.19	**32.73**
51273	Analysis	**5.51**	10.66	7.23	**32.90**
	Heart Brand Fertilizer No. 6-12-6 Guarantee	6.00	12.00	6.00	34.20
50753	Analysis	6.24	12.60	6.01	35.45
	Heart Brand Fertilizer No. 10-0-10 Guarantee	10.00	.....	10.00	35.00
51098	Analysis	11.20	.....	**9.15**	36.95
51113	Analysis	**8.95**	.....	10.41	**32.93**
	Eighteen Per Cent Superphosphate Guarantee	.....	18.00	.....	19.80
50741	Analysis	.....	18.56	.....	20.42
51076	Analysis	.....	19.07	.....	20.98
	United Chemical Company, Dallas, Texas				
	United Plantfood 3-10-3 Guarantee	3.00	10.00	3.00	21.50
50437	Analysis	3.03	10.37	**2.97**	21.95
	United Plantfood 4-8-4 Guarantee	4.00	8.00	4.00	22.80
50438	Analysis	**3.67**	7.72	4.21	**21.93**
50448	Analysis	4.08	8.17	4.14	23.33
50481	Analysis	4.00	8.27	4.43	23.57
50717	Analysis	4.12	8.46	4.18	23.80
50780	Analysis	4.08	8.90	4.31	24.32
50793	Analysis	4.30	8.82	4.19	24.63
51070	Analysis	4.16	8.52	4.49	24.29
51224	Analysis	4.08	9.05	**2.61**	**22.62**
51264	Analysis	4.02	8.13	4.06	23.06
51277	Analysis	**3.94**	8.30	4.35	23.38
	United Plantfood 4-8-6 Guarantee	4.00	8.00	6.00	25.00
50543	Analysis	4.09	8.62	**5.73**	25.60
51093	Analysis	4.02	8.61	6.46	26.23
51271	Analysis	**3.92**	**7.92**	6.35	25.11
51276	Analysis	**3.85**	8.22	**5.09**	**23.88**
	United Plantfood 4-10-0 Guarantee	4.00	10.00	.....	20.60
51025	Analysis	4.12	**9.59**	.....	**20.44**
	United Plantfood 4-10-7 Guarantee	4.00	10.00	7.00	28.30
50436	Analysis	4.16	**9.88**	7.07	28.63
51023	Analysis	4.14	10.04	7.03	28.71
	United Plantfood 4-12-4 Guarantee	4.00	12.00	4.00	27.20
50377	Analysis	4.01	**11.40**	**3.86**	**26.41**
50439	Analysis	4.10	12.18	**3.89**	27.52
50716	Analysis	4.09	12.43	4.48	28.42
50735	Analysis	4.10	12.36	4.42	28.30
51054	Analysis	4.06	12.29	4.16	27.84
51071	Analysis	**3.93**	12.56	4.02	27.67
	United Plantfood 6-9-3 Guarantee	6.00	9.00	3.00	27.60
51092	Analysis	**5.83**	**8.83**	3.19	**27.21**
	United Plantfood 6-10-7 Guarantee	6.00	10.00	7.00	33.10
50378	Analysis	6.31	10.99	**4.15**	**31.80**
50715	Analysis	**5.65**	10.40	**6.77**	**32.45**
50736	Analysis	**5.71**	10.72	7.10	33.30
51048	Analysis	**5.65**	10.41	7.04	**32.75**
51223	Analysis	6.04	10.23	**6.72**	33.14

Table 7. Analysis of commercial fertilizer, season 1935-36—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	United Chemical Company, Dallas, Texas—Continued.				
	United Plantfood 6-12-6 Guarantee	6.00	12.00	6.00	34.20
50848	Analysis	6.02	12.42	5.83	34.52
	United Plantfood Nitrate of Soda Guarantee	16.00	.....	.....	38.40
50794	Analysis	16.13	.....	.....	38.71
	United Plantfood 18% Superphosphate Guarantee	.....	18.00	.....	19.80
50779	Analysis	.....	19.32	.....	21.25
	Valley Fertilizer Company, San Benito, Texas				
	Keystone Brand 4-8-6 Fertilizer Guarantee	4.00	8.00	6.00	25.00
50314	Analysis	4.87	9.24	5.88	28.32
	Virginia-Carolina Chemical Corporation, Shreveport, La.				
	20% Kainit Guarantee	.....	.....	20.00	22.00
50574	Analysis	.....	.....	**19.67**	**21.64**
	Muriate of Potash Guarantee	.....	.....	50.00	55.00
50889	Analysis	.....	.....	50.03	55.03
	Sulphate of Ammonia Guarantee	20.00	.....	.....	48.00
50561	Analysis	20.81	.....	.....	49.94
	V-C Big Giant Crop Grower Guarantee	6.00	12.00	6.00	34.20
50280	Analysis	6.01	12.15	6.04	34.43
50406	Analysis	6.41	12.05	6.85	36.18
50573	Analysis	6.12	12.85	**5.99**	35.42
50743	Analysis	6.11	12.42	6.82	35.82
50755	Analysis	6.23	12.54	6.87	36.93
50915	Analysis	6.13	**11.91**	6.52	34.98
51114	Analysis	6.26	**11.85**	6.76	35.50
51157	Analysis	6.23	12.36	6.57	35.78
	V-C Blood, Bone and Potash Guarantee	3.00	10.00	3.00	21.50
50597	Analysis	3.16	10.69	3.07	22.72
51139	Analysis	3.09	10.08	3.19	22.02
	V-C Champion Crop Grower Guarantee	4.00	10.00	7.00	28.30
51185	Analysis	4.25	10.16	7.21	29.31
	V-C Fruit & Truck Special Guarantee	6.00	10.00	7.00	33.10
50530	Analysis	6.04	10.09	7.94	34.33
50885	Analysis	6.08	10.65	7.87	34.97
50899	Analysis	6.12	10.83	7.58	34.94
51119	Analysis	6.24	10.01	7.89	34.67
	V-C Good Luck Fertilizer Guarantee	4.00	8.00	4.00	22.80
50401	Analysis	4.18	8.37	4.30	23.97
50407	Analysis	**3.92**	8.77	4.22	23.70
50457	Analysis	**3.93**	8.87	4.31	23.93
50562	Analysis	4.03	**7.89**	4.47	23.27
50605	Analysis	4.17	9.27	4.17	24.80
50870	Analysis	4.07	8.41	4.39	23.85
51118	Analysis	**3.98**	8.70	4.14	23.67
	V-C Indian Brand Fertilizer Guarantee	4.00	12.00	4.00	27.20
50356	Analysis	4.24	12.20	4.32	28.35
50400	Analysis	4.04	12.73	4.24	28.36
50860	Analysis	4.33	12.70	4.61	29.43
50921	Analysis	4.21	12.78	4.38	28.98
51043	Analysis	4.02	13.30	4.33	29.04
51138	Analysis	4.28	12.50	4.25	28.70
	V-C Potato Special Guarantee	4.00	8.00	10.00	29.40
50692	Analysis	**3.80**	8.24	11.32	30.63
50859	Analysis	**3.93**	8.52	10.28	30.11
	V-C Prolific Cotton Grower Guarantee	3.00	10.00	3.00	21.50
50419	Analysis	3.06	10.23	3.05	21.95
50866	Analysis	3.06	10.49	3.14	22.33
50871	Analysis	3.16	10.70	3.57	23.28
	V-C 20% Superphosphate Guarantee	.....	20.00	.....	22.00
51042	Analysis	.....	21.02	.....	23.12

Table 7. Analysis of commercial fertilizer, season 1935-36—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	Virginia-Carolina Chemical Corporation, Shreveport, La. —Continued.				
	V-C Super 25 Fertilizer Guarantee	5.00	15.00	5.00	34.00
50281	Analysis	5.07	15.13	6.10	35.52
	V-C Tomato Special Guarantee	4.00	8.00	6.00	25.00
50754	Analysis	4.05	8.58	6.28	26.07
	V-C Trucker's Special Guarantee	4.00	8.00	6.00	25.00
50355	Analysis	**3.97**	8.57	6.45	26.06
50514	Analysis	**3.89**	8.34	6.15	25.31
50598	Analysis	**3.99**	8.20	6.07	25.28
50691	Analysis	**3.98**	8.67	6.48	26.22
50775	Analysis	4.10	8.39	6.12	25.80
50900	Analysis	4.04	8.96	6.23	26.41
51184	Analysis	4.12	8.29	6.17	25.80